PHYSIOLOGY *VERSUS* METAPHYSICS IN RELATION TO MIND.

BY WALTER HAYLE WALSHE, M.D.

"The laboratory is the forecourt of the temple of Philosophy; and whoso has not offered sacrifices and undergone purification there, has little chance of admission into the sanctuary."—HUXLEY, "Life of Hume."

"It was the glory of Hippocrates to have brought Philosophy into Medicine, and Medicine into Philosophy."—Auctor (?)

"Attendre et espérer."—DUMAS, "Monte Christo."

FEW physiologists, mixing in general society, can have failed to notice how common it is to hear their psychological brethren (if referred to at all) stigmatised as atheists; and this alike in coteries distinguished for pugnacious religious dogmatism, and in social circles where indifferentism marks the prevailing tone of thought. The acrimony with which the charge is made apparently increases, on the one hand, in the direct ratio of the bigotry or religious fervour, and, on the other, in the inverse ratio of the scientific enlightenment, of different speakers. Furthermore, in certain cliques a shrewd suspicion seems to have arisen that, as any whole includes its parts, physiology in general (nay, even medical science at large) is chargeable with the delinquencies of its cerebral department, and is hence condemned by these judges as a representative in its entirety of atheistic proclivity and purpose. An illustration in point may be found in the columns of the leading daily journal, wherein the reviewer of the volumes of Bain, Bastian, and Luys on Mind, Body, and Brain "need scarcely say that in all three works the physiological (some would say materialistic) aspects of the subject are strongly insisted upon."[1] No doubt some would say so, and thence at a bound jump to the conclusion (a foregone one with all who use the word "materialist" in an adverse sense) that all these authors are "atheists." In point of fact, the masses are hardly wiser in their estimate of medical belief than two centuries ago, when lay smartness and ignorance combined had fashioned the libellous apothegm: "Ubi tres medici, ibi duo athei."[2]

Now, metaphysical psychologists, though inquiring as boldly from their point of view into the genesis of mind, have contrariwise, with rarest exceptions, escaped, and continue to escape, this form of social obloquy. Whence comes this diversity of judgment? Are physiologists thus penalised because they have shown that a certain definite, if subordinate, part is played by physics and chemistry in the complex act of evolving thought, and because they have thus, at least partially, succeeded in wrenching this branch of philosophy from the nerveless grasp of the pure introspectionist? Has the success of cerebral physiology in the surface-penetration of some of the secrets of thought-production led to its condemnation? Should those secrets, in obedience to theological casuistry, be allowed to linger on in primitive obscurity, as though the earnest use of our divinest gift, intellect, were not the most fitting and the most grateful form of homage to the all-bounteous Giver? If our science toils on in humble but trusting hope to fathom on material lines the mechanism of our mental operations, is its pursuit antagonistic to belief in an Almighty First Cause?[3] Is there really any fair ground for the inference, that because physiology strives to trace out and interpret the conditions of the connexion between brain substance and mind—*ergo*, those who labour in its field are of necessity atheists? The inquiries seem to deserve an answer. Let us, then, see to what the teachings of physiology in this direction really amount. Let us try to determine whether (conflicting though they may prove with the postulates of various narrow and sectarian systems of theology) those teachings really antagonise any formal or essential principle of deistic faith, whether, though confessedly open to the charge of "heresy" (that charge so dear to sacerdotalism),[4] they do not escape even the suspicion of that treason against nature, atheism?[5]

We must prelude the inquiry into the direct work of physiology by a very rapid glance at the notions advanced by metaphysicians and theologians on the nature of mind and generation of thought. Our task throughout will be merely one of historical and very occasionally critical review. We lay no claim to originality of doctrine, but shall merely attempt in simple fashion to popularise knowledge, which alike from its nature and from the manner of its handling, has been essentially limited to the few.

(1) Now, metaphysicians (they who profess their ability to formulate an *a priori* theory of the ultimate elements of knowledge and nature of things) have held, as a class, that the act of thinking is in all its stages and all its factors a non-material process. And it does not involve any serious error to maintain that the formula under which this doctrine obtained the widest acceptance by philosophy, while it best satisfied the craving of ordinary people for some insight into the nature of their mental operations, originated with Descartes. And this philosopher's well-known formula assumed: there exists a spiritual, non-extended, indivisible substance, an objective, immortal entity, superadded to and independent of brain, which thinks, feels, and wills—a substance cognisable by self-consciousness alone, and which is in fact the "thinking principle" or proper "soul." Mind thus becomes absolutely and wholly an extra-cerebral product, and the possible offspring of activity on the part of the "soul" alone. The purely hypothetical character of this doctrine, the feeble, in some sense half-hearted, support given it by its originator, its incompatibility with every-day experiences of cerebral disease, and its proving a hopeless puzzle to cultured people, at once endowed with the critical faculty and unbiased by prejudice, all alike failed to shake its supremacy, and for long years it held sway, not as a makeshift, provisional, mere scholastic formula, but as an established primary truth. And all this though Descartes himself, in the following words, honestly avowed his disbelief in the surety of his own doctrine. "Je confesse," he writes, "que par la seule raison naturelle nous pouvons faire beaucoup de *conjectures* sur l'âme et avoir de flatteuses espérances, *mais non pas aucune assurance*."[6]

Meanwhile, as mind was thus made a product of the soul, the question at once arose by necessary involution, what in turn was the soul. Now, in all probability, no more startling chapter figures in the history of philosophy than that chronicling the varied efforts made at furnishing a sufficing reply to this query. From the days of Plato to our own metaphysicians seem to have lost themselves in a maze of conjectures, too often unfortunately no less dogmatic in tone than vague and unsatisfactory in essence. Yet be their failures, while unflinchingly registered, freely forgiven; the obscurity of the problem to be solved, coupled with the imperfection of the instrument selected for its solution, has ever proved an obstacle to success, even when that instrument has been handled by the deepest thinkers and most devoted searchers after truth.

Thus, setting aside the *profanum vulgus* of illogical and inaccurate writers, with whom the word is but a word, carrying with it no inkling even of definite signification, we find that with some philosophers the soul is a local, with others a universal, existence; by some limited to man, by others conceded to the lower animals; with certain thinkers an essence, with others a substance, with a third group a principle; with some an immaterial essence without form or extension, with others immaterial, yet possessed of these attributes of matter; with the majority a simple, with the minority a compound, existence, and with a small fraction of the latter a tripartite body, of which each division is again subdivided into three; with this sect a something contained in

[1] The Times, Jan. 19th, 1883.

[2] Browne: Religio Medici.

[3] Blaise Pascal (1623-62), philosopher of no mean grasp and honesty though he was, strove to dissuade his generation from following out the Copernican system to its issues because it maintained the heretical doctrine of the movement of the earth. Pascal would not have merited censure for hesitating to accept the Copernican system had he argued on supposed philosophic grounds (Milton died uncertain which to accept, the doctrine of Ptolemy or Copernicus); his grave error consists in having preferred theological *dogma* to that which he felt to be *truth*.

[4] "Heresy," aptly styled by Lanfrey: "Cette éternelle protestation de la liberté de l'esprit humain contre les doctrines infaillibles." Histoire Politique des Papes, p. 70: Ed. Charpentier.

[5] Atheist and atheism are words constantly used in total ignorance of their real meaning. An angry religionist, being asked for his definition of the term atheist, unhesitatingly replied: "I call any man an atheist who does not go to my church, or some one like it." Strong in sectarian conviction, but weak in classical attainment, my friend evidently had, like one greater than he, "small Latin and less Greek," and knew as little of etymology as he felt of toleration for any creed but his own. But was he not (setting aside the question of verbal roots) a fair specimen of a large class?

[6] In explanation of his doubtingness, we must remember Descartes was not merely a metaphysician—he was likewise a physicist of high distinction. The positive tendencies fostered by physical objective study served to counterbalance within certain limits the subjective transcendental activity of his grand intellect.

the body, with that a something containing it; with Aristotle an equivalent of "all the functions, sentient and nutritive, of living bodies up to the highest attributes of intellect," the "rational soul" being especially seated in the heart;[7] with the Neo-Platonists an "image or product of reason," producing in turn the corporeal; with Descartes the "spiritual substance," or "principle" just referred to, provided with a habitat in the pineal gland, a home exchanged by others for the ventricles, the corpora striata, the white substance of the hemispheres, their cortex, the plexus choroides, the dura mater, the heart, and the blood; with Locke a spiritual essence or a material substance—he could not "fixedly determine" which; with certain philosophers a something pre-existent from all time, with others evolved *pari passu* with the organism it inhabits; in the opinion of one group of schoolmen perishing with the associated body, in that of a second wholly immortal, in that of a third mortal in the main but in one of its parts immortal. Further, philosophers who maintained each soul was formed specially for its own individual organism varied in all conceivable ways as to the time and place of union of the two, while the parallel difficulty followed in settling the precise moment of somatic death at which separation of the two must occur.[8]

The vast majority of these speculators recoiled from the presumptuous task of attempting to define the actual composition of the soul, a few only of the most wildly transcendental satisfying themselves it consisted of "a drop of ether," of a "globule or spark of heat or light," of an "animated vapour," &c.

Not more widely divergent than the metaphysical notions of the nature of soul were the doctrines held as to the manner of intercourse between the soul and the body, the school of Aristotle holding that all objects enter into the soul by influx through the senses; the Cartesians, *per contra*, maintaining that it is the soul that sees and hears, that perception is a primary faculty, not of an organ, but of the soul; while Leibnitz and his followers, denying alike the imagined influx from the body into the soul, and from the soul into the body, maintain the existence of a joint consent and coeval operation of both under the influence of a so-called pre-established harmony.

Passing from the earlier metaphysical speculators to Kant (1724–1804), we find once more in the history of human struggles after truth how much easier it is to destroy than to construct. In the firm analytical grasp of that extraordinary thinker (the "most tremendous disintegrating force of modern times") the past fallacies concerning the nature of the soul had scant chance of mercy—the past shortcomings as little of escaping exposure. Ancient philosophic creeds crumbled to dust before him. But did he raise any edifice of practical significance on their ruins? Did he identify the soul? Where are they, who can fancy that they are the wiser—that they have made a nearer approach to such identification—by accepting his quasi-mystic reveries on the "ego which exists beneath or rather outside consciousness.....a noumenon,[9] an indescribable something safely located out of space and time, as such not subject to the mutabilities of these phenomenal spheres.....and of whose ontologic existence we are made aware by its phenomenal projections or effects in consciousness."[10] The first clauses of this definition seem pure assumption, soaring aloft beyond the comprehension of ordinary mortals; the latter (granting the premiss of the so-called "noumenon") seems a mystified version of a necessary inference. Even Kant himself admits the total concept to be incapable of scientific proof; and of any other form of alleged proof—the so-called transcendental — what is the practical weight? Such "proof," inasmuch as it transcends experience, can never advance beyond the unreality of subjective formulation, can never attain the reality appertaining to objective demonstration. Nay, Kant admits more than this: he grants nothing can really be proved by metaphysics concerning the attributes, or even the existence, of the soul; while holding that inasmuch as its reality cannot, on the other hand, be disproved, such reality may, for moral purposes, be assumed. So that this sublimest of the world's thinkers is obliged in ultimate analysis to admit that ordinary common sense may prove as successful in wrestling with the problem as the vastest inborn intellectual potentiality intensified by prolonged culture.

Reaching next the modified or hybrid metaphysical and physiological school of the present day (the former element largely predominant), we find one of its most eminent representatives, Bain, seeming to teach that, whatever it is, the soul has but loose connexion with the body. "The body might," he assures us, "have its bodily functions without the soul, and the soul might have its psychical functions in some other connexion than our present bodies."[11] But surely, as indeed this psychologist elsewhere himself admits, mind is a function of the body; therefore it follows implicitly from his propositions that *mind may exist without the soul*, whereas the metaphysical contention denies the possibility of thought without it. Note further that this thinker, with wise discretion, shrinks from any disclosure of his own idea, either by affirmation or negation, of the nature of the soul, and leaves us in total ignorance of what he desires us to understand, when on his own behalf he employs the word.

We may remark, in passing, that Plato thought the soul could exist without a habitat in the human body. Kant, on the other hand, held it to be beyond our powers to make any affirmation as to the possibility of its separate existence. Dugald Stewart, somewhat in the same vein, held that we "have no direct evidence of the possibility of the thinking and sentient principle exercising its various powers in a separate state from the body." Here, be it observed, the soul, as with Descartes, is a "principle." Is this anything more than a mere *word?* What is the actual *meaning* of the term in this connexion? or has it any meaning? What explanation does it furnish of the facts?

The foregoing brief analysis of metaphysical opinion, though obviously and necessarily imperfect, is not one-sided or dishonest, and seems to render the conclusion inevitable that introspective psychology has failed to supply a definite presentment of the nature of soul. Metaphysicians have, in truth, merely postulated its existence and endowed their creation with a series of attributes, the nexus of no single one of which with its assumed factor has ever been made the subject of serious proof; while, in speaking of mind as one manifestation of its activity, they simply ascribe the performance of a positive act (that of thinking), the mechanism of which they in no wise understand, to an agent (the soul), the mere existence of which they fail to substantiate.

If it be urged on behalf of any class of metaphysical schoolmen, who may refuse to accept Kant's modest avowal of failure, that they really have succeeded (because to their own contentment) in fathoming the problems of the genesis of mind and the nature of the soul, and that they are not answerable for the defective intelligence of the outside world, which fails to follow them, the physiologist need not hesitate to concede that they soar in a region of visionary transcendentalism, for which his mental bias and material modes of thought have not fitted him either as a worker or a critic. He is as ill adapted for revelling in trains of speculative abstraction, whereof the issue, purely subjective, can never reach the reality of objective demonstrativeness, as the metaphysician groping through lenses many a weary day and night to verify a single fact, the present obvious value of which may be *nil*, but of which the future story may be written as the starting link of chains of important truths. Between the metaphysical contemplative mind and the scientific observant mind the antagonism is so profound that the union of the two qualities in the same individual,

[7] Prochaska, Nervous System: quoted by Bastian, The Brain as an Organ of Mind, p. 511. On the contrary, according to the shrewder insight of one of the most far-seeing of physiologists, Xavier Bichat, the heart, or its vicinity, holds relationship to the *passions*, the head to *intellectual* phenomena. "L'acteur," he says, "qui ferait une équivoque à cet égard, qui, en parlant de chagrins, rapporterait les gestes à la tête, ou les concentrerait sur le cœur pour annoncer un effort de génie, se couvrirait d'un ridicule, que nous sentirions mieux encore que nous le comprendrions." Vie et Mort, p. 42. Paris, 1813.

[8] Singularly enough this speculative difficulty has occasionally proved the source of specific practical inconvenience. Thus "Turkish graves are very shallow, sometimes not more than a foot in depth, the reason for this being that most old-fashioned Turks still retain the superstition that the soul does not leave the body until some time after burial, when it is drawn from the grave by the Angel of Death, who would find great difficulty in performing his task if the body was too deeply buried. The consequence of this is that in warm weather a horrible stench arises from the cemeteries."—God's Acre Beautiful, by W. Robinson, F.L.S., p. 117.

[9] The "noumenon" is an "*intelligible* object—that is, one which, if it is to be cognised at all, must be so in and through the *understanding* without any *sensuous* medium" (Kant's Prolegomena, translated by Bax, p. lxxxvii.). This "Ding an sich," "thing in itself," or "noumenon," is held to be the antithesis of the sensuous phenomenon, but the actual relationship of the two was to Kant himself, has been to his disciples, and will presumably prove to the end of time to his successors, the great stumbling-block in the way of thinking out Kant's whole system.

[10] Quoted by Graham, Creed of Science, pp. 153-4. Kant, again, sometimes uses the phrase "the thinking self" as synonymous with soul; and speaks of the "doctrine of body and the doctrine of soul,—the first dealing with *extended*, and the second with *thinking*, Nature."

[11] Mind and Body, p. 153.

even in very different degrees of potentiality, is the rarest of intellectual endowments.

The physiologist of the pure observation school may then admit his deficiency in critical training for the just estimation of metaphysical methods,—and this all the more resignedly in that (as we shall by-and-by fully see) metaphysicians are found occasionally confessing, nay boasting, that they fail to understand each other, while they are likewise accused, apparently on justifiable grounds, of not at all times and seasons thoroughly comprehending each man his own individual work. So the physiologist need not trouble himself about methods but ask for results. And this he has ventured to do, conceiving himself entitled by the worth of the latter to gauge the efficiency of the former. While then acknowledging in a spirit of homage savouring of awe the abstract grandeur of the metaphysical intellect and the aims of its activity, he has earnestly but not irreverently inquired, do you metaphysicians not deceive yourselves? Are you quite sure you do not take words for ideas? Have you or have you not perpetually confounded figments of the brain with realities? To what increments of true knowledge—the real, substantial knowledge of things—can you lay claim? Have you of late done much more than clothe old thoughts in new phraseology—phraseology of greater precision, than that it has supplanted, we may fairly concede? Have you not in sober truth been engaged since the dawn of philosophy —*multum agendi, pauxillum agentes*—in a still beginning, never ending, logomachia? Can you point among your fellows to that emphatic unanimity of creed on fundamental questions, which shall demand, as its right, acceptance from the outside world, before which you pose as the fountain-heads of all ultimate knowledge? Or, have you not, on the very contrary, disagreed absolutely with each other? And, if you doubt each other, may *we* not in turn doubt you all? Is it not true that Kant never mastered, and loudly proclaimed he never could master, the doctrine of Spinoza?[12] Did not the philosopher of Königsberg declare the system of Fichte to be utterly untenable? Does not Schopenhauer in turn repudiate Kant? Were not the leading principles of Schopenhauer's own system contained, and in some measure worked out, in Fichte's "Wissenschaftslehre"? And did not the same Schopenhauer, having failed to perceive the similarity (carping critics have been found malicious enough to more than hint that perhaps he herein judged wisely), stigmatise that work, the alleged germ of his own, as a "farrago of absurdities?"[13] Has not J. S. Mill declared it to be characteristic of Hamilton that he seldom or never adhered to any philosophic statement he had adopted, that "an almost incredible multitude of inconsistencies show themselves on comparing different passages of his works with each other," and that his whole system of "intuitional" philosophy is a profound mistake?[14] And is it not equally true that the adherents of the Scotch philosopher seem to have made it plain that his somewhat ruthless English critic never succeeded in understanding him?"[15] Furthermore, has it not been averred by one of his most earnest panegyrists that Kant failed himself to grasp the full import of his own doctrines, that the "new light that was lighted for men" could not illumine his own ideas sufficiently to grasp their total meaning and anticipate the terms of their ultimate evolution?[16] Finally, has not Berkeley with equal truth and candour pronounced the condemnation alike of his own work and of all his fellow craftsmen in the fatal admission, "*We metaphysicians have first raised a dust, and then complain we cannot see!*"[17]

To the non-metaphysical mind it would indeed appear that the bootless speculations of the pure transcendentalist were calculated on the one hand to dishearten wayfarers on the road to truth by blocking the route with unintelligible mysticism, and on the other to postpone the discovery of a share of Nature's secrets by diverting any available mental power into a wrong channel.[18] How could aught but failure in solving the problems of mental philosophy be expected from a system, even though that system were sustained by surpassing intellectual force, that ignored the instrument, brain, by which the result, mind, is evolved? What success could be expected from an inquiry into the mechanism of respiration, from which all consideration of the structure, dynamics, and chemistry of the breathing-organs was purposely excluded? Conceive a man proceeding to investigate the respiratory process, who had never seen a lung! Should we consider him perfectly sane? How ineffably curious then, if not ludicrous, does it seem to find Bain announcing, with in some sort the tone of a man who has stumbled on a happy discovery, that it would be worth the while of metaphysicians to learn something of nerves—we presume, impliedly, something of brain also. Still this niggard dole of acknowledgment places the donor at all events in advance of J. S. Mill, who to the very close of his career contemptuously and obtrusively rejected cerebral physiology as a guide, of even the most subordinate value, in the study of mind. Why, the solitary discovery of the connexion of aphasia with a special spot in a special gyrus of a special hemisphere of the brain, taken in conjunction with the corollaries logically deducible from that connexion, seems a far weightier offering towards the elucidation of the actual mechanism of mind—of the conditions under which Nature works—than all the transcendental guesswork furnished by the toil of metaphysicians from Plato to Schopenhauer.

Nevertheless, the conspicuous failure of purely introspective philosophy, unaided by objective investigation, to establish its special psychic doctrines, does not, on the other hand, disprove the possible independent existence of soul as one of the factors of mind. Such existence may be, or may not be, a reality, for anything that metaphysics show or do not show. The failure of transcendentalism, admitted even by Kant, simply proves that in wisdom which is not of pure and unaided metaphysics lies such lingering hope, as an enthusiast may cling to, of substantiating the reality and the nature of the soul's existence and practical activity. Nor does the failure signify (whatever may be its import as to the efficiency of transcendentalism) that introspection must not be allowed to play a large, though far from the solitary, part in the attempt to elucidate the nature of mental operations. To reject the help of introspection in analysing the phenomena of mind would be as illogical, nay fatuous, on the part of the physiologist as the negation of the utility of all objective aid by the bulk of metaphysicians. But in point of fact such rejection is a sheer impossibility, for we cannot cogitate without examining consciousness, and when we do this we introspect. Besides, there are facts of mental operation, and laws regulating these facts, which lie without the pale of physiology as an objective factor, facts and laws which can only be even guessed at by the analysis of self-consciousness. The results of such analysis plainly cannot be claimed by a department of inquiry which deals with phenomena physically demonstrable alone; be those results sound or unsound, conclusive or tentative, final or provisional, such as they are, they are the property of introspective psychology alone. Furthermore, there is a large class of psychological concepts framed on a combination of both kinds of evidence, subjective and objective.

(To be concluded.)

[12] Kant's Prolegg., trans. by Bax, p. xxxv. [13] E. B. Bax, ibid., p. 101.
[14] J. S. Mill, Autobiography, pp 275-6, 3rd ed., 1874.
[15] Maudsley, Journal of Mental Science, vol. xi, p. 551.
[16] E. B. Bax, ibid., Preface, p. 3. [17] Human Knowledge, vol. i., p. 74.
[18] So far from its being desirable that that rare form of gift or "acquired mental dexterity," as the introspective faculty is affirmed to be by Sir William Hamilton, should be vouchsafed to cultured mankind at large, the endowment may without probable ultimate loss to real knowledge be left in the grasp of the limited class for which its possession is claimed.

Clinical Lecture
ON
REFLEX UTERINE VOMITING.

Delivered at University College Hospital.

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GENTLEMEN,—It is my intention to bring before your notice to-day certain cases at present in the ward which illustrate in a very complete manner some of the various phases of an affection very common in gynæcological practice—reflex uterine vomiting. Of the various symptoms or complaints which come under the notice of the gynæcologist reflex uterine vomiting is one of the most common. It is also very important, and that principally for two reasons: (1) On account of the distress the symptom itself produces, and (2) because it interferes so considerably with the process of nutrition, one of the effects of chronic vomiting being necessarily a slow starvation. I propose to submit to your

notice the particulars of three cases now in the ward, the notes of which have been prepared and arranged by the late obstetric assistant, Mr. A. H. Mason.

CASE 1.—M. H——, single, aged twenty-seven, admitted into hospital Oct. 4th, 1883.—History: The illness dates from nine years ago, beginning with pain in the lower part of the abdomen at each monthly period. At first the catamenia appeared between the age of fifteen and sixteen, and were regular and painless for two years. Then pain began, and coincidently the period became irregular, the patient going five, six, or seven weeks. At the end of two years, when she was aged twenty, the pain became very severe, lasting the whole period (three days), and the flow became scanty. Then vomiting set in, at first in the morning before breakfast, and accompanied by severe headache, at the period; it rarely took place in the intermenstrual period. This lasted till four years ago, when vomiting began to take place independently of the menstrual epoch, occurring any time in the day, but usually in the morning, accompanied by severe pain in the epigastrium, which was increased by food but relieved by vomiting. No hæmatemesis at any time. The patient gradually lost flesh and strength, and was unfitted for any employment. She had been in hospital twice before, in April, 1882, and in November, 1882. Each time she was relieved by treatment, but relapsed shortly after going out. At the age of sixteen she went into service, and her first situation was a very hard one. There was a great deal of scrubbing to do and carrying heavy weights, &c. She remained in service six years, and then found it was too much for her; so she took to dressmaking, and worked hard at a sewing machine. As a child her food was not good. She had pleurisy four years ago. Examination of the uterus four days after admission, as follows:—Patient wearing a ring pessary. This was removed, and the uterus found to be retroflexed, with the middle portion much atrophied. Sound enters normal length; great difficulty in introduction. A Hodge pessary, made from ring three inches in diameter, inserted. She was ordered the prone position, with knee-elbow position six or seven times a day, and a draught composed of five minims of nux vomica, one minim of tincture of capsicum, half a drachm of sulphate of magnesia, and two minims of dilute hydrocyanic acid, to an ounce of chloroform water, three times a day. Improvement soon began under this treatment. The headache was the first thing to disappear, then the abdominal pain. The latter has, however, returned again slightly. The sickness became less, and finally was limited to once in the evening, about seven o'clock, for a long time. The patient was then ordered to take tea at 4.30 P.M., and nothing more till 10 or 11 P.M., when she had a meat sandwich. Under this regimen the vomiting has been completely subdued. When this patient first came under notice she was in a most miserable condition from the pain and starvation together. The uterus was in a very atonic and weak state. The retroflexion present was treated by a Hodge pessary. After some time it was found that the uterus had become anteflexed. Then it was left to itself for a time, but the anteflexion remained. On the second occasion of her leaving the hospital a simple ring pessary was introduced. This had, however, proved inefficient, and the retroflexion (the primary affection) was found to have returned. This case is an instance of a condition, not very uncommon, where the uterus is in a state of very great feebleness, and entirely wanting in ordinary tonicity and firmness. It is at the mercy of the action of gravity, and when held in position for a time is liable to fall over in the opposite direction. The enfeeblement of the uterus is due to the long-continued chronic starvation from which this patient had suffered so much, and for this the chronic vomiting is responsible.

CASE 2.—S. A. N——, married, aged forty, mother of five children, the last born three and a half years ago, was admitted on October 24th. The patient complains of pain at the bottom of the abdomen, like intense cold, also of difficulty of micturition. Illness began with sudden pain on and difficulty of micturition three years ago (Nov. 1880). At that time she had been engaged in heavy housework, scrubbing of floors, &c. This was succeeded by a feeling of nausea, but no actual vomiting. For the last six months the patient has been laid up completely with these symptoms, which have increased in severity. There has been vomiting of a watery fluid mixed with bile every morning. There has also been menorrhagia with increasingly shorter intervals between the epochs—six or seven days to three weeks—clots frequently passed. There is excessive frequency of micturition. On examination the uterus is retroflexed with posterior rotation. The os is slightly more patent than natural, admitting tip of finger. The posterior lip is swollen. Sound enters two and a half inches. Flexion easily reduced, but causes some pain. Mucous discharge from cervix. To have knee-elbow position seven or eight times a day, prone position at all times. After ten days of this treatment a Hodge pessary prepared from a three inch ring was inserted. Patient has not vomited since admission, and the bladder trouble has been less till quite recently (Nov. 14th), when there has been again increased frequency of micturition with pain in the abdomen. The examination of the urine gave negative results. This patient seems to have enjoyed fairly good health until her last confinement. It appears that the illness dates from over-exertion subsequent to that time. On admission her condition was one of entire incapacity for ordinary exertion and the care of her home and family. The sickness was not the most important symptom in this case, nor was it very severe, but it is noticeable that it occurred coincidently with other symptoms, resulting from the displacement with which the patient was found to be affected. The sickness had of late become worse, and no doubt would have attained still greater severity had the affection remained untreated. And it is further observable that it disappeared as soon as treatment was commenced.

CASE 3.—E. C——, servant, aged twenty-eight, admitted on Sept. 4th, 1883. The patient has been in hospital three times before for retroflexion associated with pelvic hæmatocele. She complains of pain in both ovarian regions, vomiting, and irregularity of menstruation, the periods usually somewhat profuse, and coming on sometimes at intervals of two months, sometimes every fortnight. Illness dates from several years back, but the patient is unable to fix an exact date; began with vomiting, which seemed to be traced to lifting heavy weights. The vomiting originally bore no relation to food, occurring at any time during the day. For the last two months it has occurred from five to ten minutes after taking food; began with a copious flow of frothy fluid, of acid taste, followed by ejections of food. The vomiting is not worse during a menstrual epoch. Uterus found retroflexed sharply, and directed to the left side (fundus); reduction by sound painful; right ovary prolapsed and tender. A Hodge pessary, two inches and a half ring, was inserted, which was shortly replaced by a larger one, and eventually by a No. 3 Greenhalgh, with padded posterior bar. Up to the present time very little benefit has been experienced as regards the vomiting, but the uterus is straighter and the right ovary out of reach. This case is one in which the symptoms are very severe, and in which the cure is difficult. The patient has apparently a good constitution, and the sickness has not been before so persistent or troublesome as it has proved to be on this occasion. On a former occasion there was hæmatocele, but when the patient left the hospital the uterus was then being kept in place by a pessary, and the retroflexion was amenable to its action. Some time after leaving the hospital the pessary was removed, and there has been a rapid return of the unfavourable symptoms. The uterus was found much retroflexed, and the right ovary even lower than the fundus uteri and somewhat swollen. In this case no doubt the displacement of the ovary is in part responsible for the sickness. With the object of more completely pushing the ovary into its place a rather large padded pessary is being used, and it would seem that temporarily this has had the effect of increasing the sickness, though ultimately the benefit derived will it is considered compensate for this. The chronicity of the case is accounted for by the displacement having for some years probably escaped recognition, and since treatment has been applied it has, owing to the patient not being continuously and sufficiently long under observation, not as yet cured the disorder.

In such a case as this a cure cannot be obtained unless the uterus is continuously treated. Two or three months' absence of treatment is sufficient, as has been shown in this case, to undo the good previously derived, and it is most unsatisfactory to have, as we now find it necessary, to begin almost *de novo*.

According to my experience reflex uterine vomiting when of an obstinate character is very frequently associated with great weakness and want of tonicity of the uterus, and a flexed condition of the organ is almost invariably also present. There are undoubtedly cases of reflex uterine vomiting in which the cause is a different one, but they are

exceptional and occur rarely. The unduly soft uterus readily bends, and any temporary increase in the degree of the flexion is attended with aggravation of the reflex disturbance—viz, the vomiting. This is a fact with which observation of many cases has made me acquainted. The several factors concerned in the production of this grave disorder may be enumerated as follows:—1. A general enfeeblement of the body, the result of a low condition of the nutritive process in which the uterus participates. 2. The physical weakness and pliability with which the uterus is consequently affected. 3. The flexed condition of the uterus, liable to be intensified by certain movements or positions of the patient. The sickness and vomiting appear to result from the irritation of the uterine nerves consequent on the temporary or permanent compression of the uterine tissues. It is almost certainly relieved, or for the time at all events removed, by measures having for their object the maintenance of the uterus in a normal position and shape. In two of the three cases above related immediate relief was obtained from the treatment. The third is a case in which the condition of the ovary introduces a complication and increases the difficulty.

On the diagnosis of reflex uterine vomiting I may, in conclusion, add a few remarks. There is no doubt that many cases of this affection escape true recognition, the sickness being erroneously attributed to the liver or the stomach being the seat of disease. Many cases of so-called "bilious" vomiting, and not a few supposed of gastric ulcer, turn out on investigation to be cases of uterine vomiting pure and simple. As regards the liver and the stomach, it will be found possible to exclude these organs as causes of the vomiting from the fact that apart from the vomiting there is no other symptom indicative of disease of the organs in question; while, on the other hand, there are generally marked symptoms indicating that the uterine functions are disturbed. One symptom specially indicative of the uterus as the cause of the sickness is the exaggeration of the sickness, which is liable to occur when the patient moves or walks or exercises herself. It must be added also that in cases of reflex uterine vomiting, where the malady has been of long continuance, the stomach itself is liable to become affected. The secreting power of the stomach is enfeebled by the long-continued starvation; and it is no longer capable of producing gastric juice to any amount, which adds another factor to the pathology of such cases. Hence a quasi-paralysis of the gastric mucous membrane; and I have seen cases of this kind in which the extremest care was necessary to prevent a fatal issue, even after the tendency to vomit had been obviated or diminished by appropriate treatment.

CASE OF

LETHARGIC STUPOR, OR "TRANCE,"

EXTENDING CONTINUOUSLY OVER MORE THAN TWENTY-THREE WEEKS, DURING WHICH LIFE WAS PRESERVED MAINLY BY FEEDING WITH THE STOMACH-TUBE.

BY W. T. GAIRDNER, M.D., LL.D.,
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Commentary.—The case recorded in THE LANCET of Dec. 22nd, 1883 (p. 1078), has been left up to this point without remarks, other than those obviously suggested by the direct observation of the facts in comparison or contrast with those of other cases coming more or less under the designation above-mentioned. But in perusing, even in the most cursory manner, the multitudinous literature pertaining to the subjects of "trance," "ecstasy," "catalepsy," &c., not to speak of the popular narratives which from a very remote antiquity have handed down the tradition of preternatural sleep as an element in the fairy tales of almost all languages,[1] one is struck by the almost uncontrollable disposition to regard such cases as altogether outside the limits of true physiological science; as being, according to the expressive Scotch phrase, "no canny,"—or, in other words, miraculous—and as involving questions connected with the unseen world, "the undiscovered country from whose bourn no traveller returns." So much is this the case, that if in this nineteenth century the questions which presented themselves to Hippocrates in the treatise, *περὶ ἱερῆς νούσου*, "Concerning the Sacred Disease," had to be rediscussed, it would certainly be as regards some of the disorders mentioned above, and not as to epilepsy in its well-recognised clinical types, that the theory of a supernatural origin of the phenomena, whether favourably entertained or not, would fall to be argued. The irreconcilable differences of opinion in the Belgium Academy as regards the quite modern instance of Louise Lateau are sufficient to show that all the culture and the scientific instincts of the present age have not quite inaugurated the "reign of law," nor established finally the position that "miracles do not happen." On the other hand, the researches of M. Charcot and others seem to be ever extending the domain of science further into the region of the marvellous and the obscure, so that even the most pronounced cases of "demoniac possession" of the olden time have become the common-places of hystero-epilepsy in the clinique of the Salpétrière. The peculiar interest of the present case is that it is altogether devoid of any of these adventitious, and more or less romantic, incidents. The patient is the mother of a family, and has lived a strictly domestic and (up to a short time before her seizure) healthy and regular life. There are no peculiar moral and religious problems to perplex the situation. There is no history of inveterate hysteria, or of long-continued rapt contemplation; nor has there been the slightest evidence of any craving after notoriety either before the attack or since its termination. The moral atmosphere, in short, surrounding the phenomena is altogether unfavourable to exaggeration and imposture, for which, indeed, no reasonable motive can be assigned. Nevertheless, under these very commonplace conditions, concurring with some degree of melancholy or mental despondency after delivery, but during a convalescence otherwise normal, Mrs. McI—— presents to our notice a condition of suspended consciousness and disordered innervation in no degree less extreme than the "trances" or cataleptic attacks which have been recorded as the result of the most aggravated hysteria, or as the miracles of religious ecstasy and profound mental emotion. She becomes for the long period of over 160 days continuously an almost mindless automaton, connected with the external world only through a few insignificant reflexes and through the organic functions. She is fed, almost without resistance, through the stomach-tube; she defecates and urinates (during much the greater part of the time) unconsciously; she is absolutely passive as regards everything that demands spontaneous movement, and betrays almost no sign of sensation, general or special, when subjected to the severest tests that can be applied short of physical injury. But while her senses are thus shut, and her volitions in suspense to an extent much beyond ordinary sleep, there is, nevertheless, a *sleep within the sleep*. The periodicity of day and night is maintained by some change in the condition of the innervation, of which snoring is the sole external indication. She is not convulsed, nor paralysed, nor delirious; the singing, laughing, weeping, adoring ecstasies of hysteria and of religious excitement are wholly wanting; nor are there during many months such intervals of normal consciousness as are observed in almost all the recorded cases of hysterical coma and of catalepsy. The statue-like pose, moreover, and the *flexibilitas cerea* of typical catalepsy are absent in this case. The return to consciousness is followed or accompanied by a return of all the normal functions of mind and body; there is now no incoherence, nor even distorted perceptions, as of a dream-life occupying the somnolent imagination for months, and therefore all the more hard to reconcile with realities. She is self-possessed, but unobtrusive, easily managed, and betraying only natural emotion; she persists in maintaining that the whole period of the apparent unconsciousness is a complete blank to her recollection. She is grateful for her recovery, but manifests no craving for sympathy, and no tendency, as yet, to revert to any morbid condition of despondency such as is described at the commencement of the attack. In connexion with this last point, although there is no evidence of her having been personally insane, it is not to be denied that her family history contains strong presumptions of a hereditary predisposition bearing in that direction.

[1] The favourite nursery tale of the sleeping princess entranced for a hundred years has been shown to be derived from an Aryan source; and the myth of Rip Van Winkle is also, it is said, extremely ancient. For much more of a like mythical and unauthenticated description, as well as a good deal of more plausible-looking material, the reader who is not scrupulous about scientific exactness, and who prefers to have his marvels in a rather undigested condition, may refer to Dr. Mayo's little work, On the Truths contained in Popular Superstitions, or to the fully more entertaining, if not more instructive, Philosophy of Mystery, by Walter Cooper Dendy.

Such is a brief summary of the more essential facts of a case which, within my own experience, is unique as to the duration and continuity of the symptoms, and to which I have not been able to find an exact parallel in the more recent literature of the subject. It will not have escaped the reader of the more detailed narrative that in the earlier part of the case (before the patient left home), some facts are recorded as regards the evacuations which might bear the construction that she was, at that time at least, so far conscious as to be capable of imposing upon her own relatives and attendants. But I am far from believing that this last conclusion follows from the facts as stated. That her consciousness was more awake to impressions from without at this period than it became afterwards I see no reason to question, but that there was any conscious double-dealing I do not believe. It seems not at all inconsistent with the facts to suppose that even with a much lowered condition of activity of the higher cerebral functions she may have retained enough of apparent spontaniety, in connexion with what has been called the reflex function of the brain, to be capable of obeying the imperative calls of nature in a quasi-automatic manner, and to be moved rather to do so when alone than in the presence of others. The mental state of this patient, however, and of the subjects of "trance," and, I may add, somnambulism in general, is, no doubt, extremely perplexing, and difficult even to imagine correctly, and I am well content to put the facts on record without being too confident in advocating any theory of them as in all points satisfactory.

In a case which I saw with Mr. Page of Carlisle many years ago, and which in many points resembled the present one, approaching it more nearly indeed than any other within my own knowledge or experience, there was a tendency to muttering delirium, extending over hours, and not at all unlike the character of the muttering in the deeper stages of the coma of typhus fever, though without any febrile concomitants. Mr. Page has been kind enough to furnish me with the following brief recollections of this case, which occurred in the higher ranks of society. "The lady about whom you inquire died about two years ago from probably tubercular disease. At the time you saw her she was fed for more than two months altogether, and for another month partially, by the tube; she lay for more than a week at a time silent and motionless, then began to mutter, and would continue to mutter for twenty-four to thirty hours, then go into silence again with closed eyes, her breathing being the only sign of life except the action of the bowels and bladder, which was carefully watched for by her attendants. She began to take food by swallowing a few drops of grape-juice out of a spoon; this was gradually increased in quantity, then something else was substituted; and at length she took enough by the mouth to sustain her, and gradually recovered her mental power and physical strength. She was taken to Silloth, where she remained about three months, and by the time she left she was able to talk rationally, and to walk a little. Ultimately she perfectly recovered both in body and mind, continuing well for many years. During her attack she was taken up daily and dressed, just as a corpse might have been; then put on a chair, and there she remained."

My personal impression of this case now is that the unconsciousness was by no means so deep as in the case of Mrs. McI——, but at this distance of time it would probably be difficult to determine the point. It is clear that the return to consciousness was much more gradual. These remarks apply also to a case of genuine and typical catalepsy which I, in common with many others, saw not long ago, under the care of Dr. Wood Smith, in the Glasgow Royal Infirmary, and afterwards in the Town's Hospital. The patient was a male, and had been subject to strong religious impressions; the statue-like attitudes and the maintained position of the limbs when passively moved were highly characteristic; and although the eyes were frequently open, they were utterly devoid of expression. Sensibility of every kind seemed abolished, yet there was this difference between the cataleptic and Mrs. McI——: that in the former case Dr. Finlayson and I had no difficulty in compelling the patient, as it were by mere mechanical urgency, to get out of bed and walk automatically round the ward, a proceeding which was plainly out of the question in my case. I have never happened to see another case of quite typical catalepsy, but to those which have most nearly approached it in my experience the same remarks apply. This case of Dr. Wood Smith's ultimately and gradually recovered, after having been in the cataleptic stupor for many weeks together.

(To be concluded.)

CASE OF

STONE IN THE FEMALE WITH SACCULATED BLADDER.[1]

BY WM. CADGE, F.R.C.S. ENG.

IN March of last year Dr. Hale White showed at the Pathological Society of London a specimen of sacculated bladder in the female. In the paper, and in remarks made to the meeting, it was pointed out how very rare it was to find sacculation of the female bladder; so rare is it that the Pathological Transactions contain no case; and out of 3000 autopsies at Guy's Hospital no instance of it is recorded. It was also contended that neither stone nor stricture ever caused it; and it was thought probable that when it did occur it was caused by pelvic cellulitis, which set up either cystitis or led to the formation of abscess which opened into the bladder. The report in the journals of this paper and discussion is very meagre; but if it is, as far as it goes, correct, I should be inclined to doubt some of the statements adduced. For instance, I cannot suppose that it is so rare an event as is indicated by the experience of Guy's; he would be an indefatigable pathologist who would take note of the condition of the bladder in every case so as to be able to say that it never had occurred. Again, although it may be, and I think it is, correct to say that stone is never the cause of sacculation of the bladder, what I believe was meant was that stone and sacculated bladder in the female never were known to co-exist. This inference, however, is not correct, as the case I am about to describe will show. Instances of stone in the female with an approach to sacculation of the bladder are recorded, notably one a few years ago by Sir H. Thompson; but this case, and such as this, I should describe as pouching of the bladder, due in part to the weight of the stone and the expulsive effort of the bladder forcing the floor of it towards the vaginal cavity, where it is ill-supported; here all the coats of the bladder are carried down towards the vagina. I once assisted the late Mr. Gibson to remove a large stone which bulged down the vesical wall till it was external to the vulva, and had been mistaken for a prolapsed uterus. Sometimes the stone will make its way by thinning and ulceration through the vesical walls; and in our museum there is a very remarkable specimen of a large oblong calculus which escaped and dropped from the female in this way. But I know of no other instance in museums, or in the records of surgery, of a stone being enclosed in a proper sac having a narrow channel of communication with the bladder, in which the stone was removed by operation.

The patient, a married woman, aged sixty-one, was an out-patient of the Norfolk and Norwich Hospital in Oct. 1882, complaining of dysuria. She was examined, and as there was a curious projection of the orifice of the meatus, not quite like, but not very unlike, a vascular growth, it was thought probable that this was the cause of the dysuria, and she was admitted as an in-patient. At first, and with perhaps insufficient investigation, I took the same view; I noticed that I could not see, and only with difficulty could find, the actual orifice of the urethra. As I have said, it projected and looked vascular, and I clipped off the whole projecting part with scissors. Still the vesical irritation continued unabated—rather it increased—and I therefore examined the bladder, and detected a stone lying free. With the finger in the vagina, I also felt what I took to be an encysted stone, about the size of a chestnut, prominent in the roof of the vagina, close in front of the os uteri. I thought with the sound I could detect the free upper end of this encysted calculus in the bladder. About a week after the examination, the patient being placed on the operating table, I dilated the urethra, and with my finger I verified this diagnosis. The calculus lying free was easily extracted; it was rounded, white, about the size of a small walnut, and weighed three drachms. Then, feeling for the exposed part of the encysted stone, I found it to be a flattened disc, which in a moment broke off at its narrow neck; this free part was extracted, and with some trouble I discovered amongst the folds of the empty bladder the broken end of that which remained. By slow degrees I was able to dilate the mouth of the cyst, and slip over the

[1] A paper read at the Norwich Medico-Chirurgical Society.

finger a narrow well-curved scoop. With this the stone was turned out of the cyst, and was easily removed by forceps. The bladder for a few days was frequently washed out with Condy's fluid and water. Symptoms of peritonitis, however, quickly manifested themselves, and the patient died in about a week.

The post-mortem revealed the following facts:—There was no general peritonitis, but behind the pubes there was a sloughy cavity containing offensive pus and urine. In separating the recently adherent intestines this cavity was opened, but when the whole bladder and uterus were removed and dissected this was the relation of parts. The bladder proper was small and contracted; its muscular walls were quite three-quarters of an inch thick; the mucous membrane was deeply injected and slate-coloured, and its prominent folds were covered with adherent phosphatic matter. There were three sacculi, one large in the centre of the posterior wall; this was as large as the bladder itself, and was composed of its mucous and peritoneal coats only, no muscular fibres, and communicated with the bladder by a well-defined round opening, barely large enough to admit the tip of the forefinger. The whole interior of this sac was in a state of sloughy, almost gangrenous, inflammation; it contained, as I have said, fetid pus and urine, and was clearly the focus and starting-point of the inflammation which caused the death of the patient. The smaller sacs were situated close in front of each ureter; that on the right, from which the stone was removed, had for its walls both muscular and mucous coats; the orifice was contracted so as barely to admit a No. 10 catheter, but it was easy to see how the stone had fitted it. There was no sign of inflammatory mischief around the sac, and it contained only some creamy muco-pus. The ureters were rather enlarged, especially the left. The kidneys were healthy. The uterine walls contained a fibroma about the size of a walnut.

The patient had lived until the last two years in Gloucestershire; her father died after lithotrity, and her brother, who lives in Buckinghamshire, was at this time said to be suffering from stone. The cause of death in this case was localised peritonitis; and I may say that in nearly all the cases of death from encysted stone which have come under my notice—and they are not a few—the same thing has occurred; and the explanation, I believe, is easy: the urine in these sacculi is retained by the sphincter-like action of the muscular columns which surround their entrance. There is generally no muscular covering to these sacculi, and so they cannot contract and empty themselves; hence the urine is retained, it decomposes and sets up inflammation, which extends by contact to the parts around. In cases like this, in which an operation is performed, there is, for a time at least, an additional cause of general cystitis and fetid urine, and so the morbid condition in the sac is aggravated and hurried on to a fatal extension.

The cause—for I think there is only one—of sacculated bladder is not far to seek; and it explains why the condition is so very rare in the female. This cause is obstruction to the easy outflow of the urine, which in the male, in nineteen out of twenty cases, is due either to enlargement of the prostate or to stricture—and much more frequently to the former than to the latter. Stricture generally occurs in the young, producing hypertrophy of the bladder, but hypertrophy with contraction. Enlargement of the prostate always occurs in the aged when the natural powers are failing; hypertrophy is the result of the obstruction, but it is hypertrophy with dilatation; and it is precisely in these cases that the mucous membrane is forced between and through the thin muscular walls so as to constitute the sacculi. Many surgeons allege, and notably the late Mr. Crosse, that the presence of a stone, by inducing vesical tenesmus, produces sacculation; but I cannot agree in this theory, because, if there is no obstruction to the outflow of the urine, the irritated bladder at once relieves itself and there is no inducement to form sacs, and in the young, where neither stricture nor prostatic enlargement is found, we seldom, if ever, find stone and sacculation coexisting. But in the old, or in stricture cases, I can well believe that the presence of stone increases the tendency to sacculation. In the female, where there is no prostate and seldom any stricture, obstruction to the escape of urine is rare, and hence we should expect sacculation of the bladder to be, as it is, very rare indeed. If stone could cause it, we should expect it to be less rare, because stone in the female is not so very uncommon. How, then, is the combination to be explained in the case I have related? In my judgment the stone had little or nothing to do with the production of the sacculi, but that the growth around the orifice of the meatus, as it seemed to close the opening and make it difficult to find it even with a probe, so it caused the obstruction to the outflow of urine, and this obstruction was the real cause of the sacculation. This obstruction, too, probably forbade the escape of the minute calculi when they first descended from the kidney, and thus, so far from the stone being the cause, it was at the most an aggravating condition of the bladder.

ON THE

PHYSIOLOGY OF THE CARBOHYDRATES IN THE ANIMAL SYSTEM.[1]

BY F. W. PAVY, M.D., F.R.S.

BY a mode of investigation I have been recently adopting, through which information is furnished of the precise nature of a carbohydrate existing in a product, I have been able to recognise and follow changes which have hitherto escaped observation, and have thus been afforded the opportunity of acquiring new knowledge regarding the physiology of the carbohydrates in the animal system.

In an "Introductory Note,"[2] presented to the Royal Society in April last, I gave a summarised representation of the main points that had been disclosed, and stated that I proposed to deal with the subject in detail in a series of communications.

In this communication, which constitutes the first contribution, I purpose dealing with the changes undergone by the carbohydrates in their progress after ingestion into the portal blood. When I first became aware of the significance of the information which was being revealed by the method of investigation I was pursuing, I was working at the changes occurring within the system, and more especially in connexion with the liver; but, seeing that the matter was presenting itself under a perfectly new light, it appeared to me advisable that the investigation should be carried to the commencing point at which the carbohydrates come into relation with the animal system,—viz., the alimentary canal. I therefore started upon a systematic inquiry into the changes undergone by the four chief carbohydrates of our food—grape sugar, cane sugar, lactin, and starch—in their passage towards absorption and arrival within the portal system of vessels. This inquiry has resulted, not only in new knowledge being supplied, but in confirmation being given to the knowledge that had been acquired regarding the phenomena occurring in other parts of the system. By thus beginning with the study of the phenomena at the starting-point, or the point where the carbohydrates first come into relation with the animal system, important help has been afforded, and all the information obtained stands in harmony, the one part with another, and conspires to show that the changes occurring in the principles belonging to the carbohydrate group proceed exactly in the reverse direction of that which has been generally supposed.

The means by which the truths to be adduced have been disclosed have consisted in the employment of extended measures for discriminating the precise nature of a carbohydrate having to be dealt with, and the application of the method of quantitative determination with the ammoniated cupric test which I introduced a few years ago.[3] Without the aid of this test I am quite satisfied I could not have obtained the knowledge that has been acquired. One step has led to another, and it has been by a gradual process that the matter as it has now to be put forward has been evolved. If the original information obtained had not been before me I should have had nothing to suggest the course of investigation that followed. The process of differentiation adopted has been based upon the employment of alcohol, and the determination of the cupric-oxide reducing power of a body before and after treatment by boiling with sulphuric acid for conversion into glucose. By the employment of alcohol, starch and its animal congener, the so-called glycogen, are separable from the dextrins, maltose, and the sugars. Methylated spirit is what I have used, and it has

[1] Communication read at the Royal Society, Dec. 20th, 1883.
[2] Proceedings of the Royal Society, vol. xxxv., pp. 145-147.
[3] Ibid., vol. xxviii., pp. 260 and 520.

invariably been submitted to distillation, to secure freedom from chance contamination that might vitiate the result. Actual experience has taught me the necessity of giving attention to this point. The specific gravity of the spirit has stood at about ·8030, which corresponds with the strength of about 97 per cent. of alcohol. After separating by alcohol, and collecting the colloidal carbohydrate, its amount has been determined by conversion into glucose, by boiling with sulphuric acid, and estimating the glucose with the ammoniated cupric test. Observation testifies that the process yields extremely delicate and accurate results.

In the case of the dextrins, maltose, and sugars, the differentiation is effected by dividing the product into two equal parts, and taking the cupric-oxide reducing power with the ammoniated cupric test of one part in its unaltered state, and of the other part after treatment with sulphuric acid, to convert into glucose. From the information supplied regarding the condition of the two parts, the nature of the particular carbohydrate present is shown. When such a plan of procedure is not adopted, and the cupric-oxide reducing power is simply taken, no correct information can be obtained as to the nature and quantity of the body present. For instance, the portal blood may contain a low cupric-oxide reducing dextrin, and if the cupric-oxide reducing power, as it at first exists, were taken as expressive of glucose, which is what in reality has hitherto been done, the amount of carbohydrate actually present would be very much under-estimated. At the same time, no information is supplied that the body consists of glucose. It is only by looking at the cupric-oxide reducing power before and after treatment with sulphuric acid that a correct knowledge can be acquired, concerning not only the nature but likewise the amount of the principle which is present. For conversion into glucose, sulphuric acid, to an extent to give a 2 per cent. strength in the liquid operated upon, is added. A point to keep in view is to prevent the development of colour, as this interferes with the delicate determination of the result in the subsequent process of titration with the ammoniated cupric test. Hence, as it has been found by experience, it is necessary to use the pure acid. The condition of the product must be kept in view to secure that the sulphuric acid added is not appropriated by displacing a weaker acid from any saline combination present. The product if alkaline must be brought to the neutral state before the sulphuric acid is added, or more sulphuric acid added in order to ensure the 2 per cent. strength. The process of boiling is carried on for different lengths of time, according to the nature of the product dealt with. Information about this will be given when the products are being spoken of. When, as with cane sugar and derivatives of cane sugar, boiling for a few minutes only is required, this can be done in an open flask; but when boiling for a long time, as for one hour or an hour and a quarter, is required, it is necessary to use an inverted condenser to prevent loss by evaporation, which entails the risk of the higher degree of acid strength attained occasioning a destruction of carbohydrate. Observation has taught me the necessity of giving attention to this precaution. What, of course, is wanted is a complete conversion into glucose by the acid treatment. If such is not obtained a vitiated result is given. With some products, as will be seen further on, on account of the resistance offered to conversion, it is advisable to employ a high pressure boiler and raise the temperature to 300° F. (140° C.). After the conversion has been effected, the liquid must be brought to the neutral state before titrating with the ammoniated cupric test. This requires to be done cautiously. A strong solution of potash is used for the purpose, and care must be taken to have the liquid cold before adding the potash, and to see that the temperature does not rise to any material extent during the process, in order to avoid leading to a destruction of glucose. Potash at a high temperature very readily destroys glucose, and by not giving attention to the point referred to error may occur. Sulphate of soda is used for more effectually precipitating albuminous matters at a boiling temperature than otherwise can be done. It is necessary to give attention to the sulphate of soda being pure. The commercial sulphate of soda I have found to be so adulterated with carbonate as to effervesce on the addition of an acid; and this, if used, would entirely frustrate the object for which the agent is employed.

With these preliminary remarks I will now proceed to deal with the principles in detail.

GRAPE SUGAR.

Grape sugar is characterised by producing the same cupric-oxide reducing effect before and after treatment with sulphuric acid. If after contact with a ferment a product is presented which does not possess the same cupric-oxide reducing power before and after treatment with sulphuric acid, it must be inferred that the grape sugar has been transformed into another body. Hitherto the carbohydrates have been known to be transformable by increased hydration attended with the acquirement of increased cupric-oxide reducing power into grape sugar or glucose, which appears to occupy the position of a final product in the carbohydrate group. The results to be detailed will show that within the animal system, contrary to existing notions, transformation in the opposite direction occurs, and glucose can be made to move into a product of less cupric-oxide reducing power. By boiling with sulphuric acid this product is carried back again into glucose. A ferment exists in the stomach and intestine of the rabbit which has the property of moving glucose into a body of less cupric-oxide reducing power. This statement is substantiated by the following experiments. With saliva and the pancreas, I may first mention, no alteration has been observed to be produced.

Grape Sugar placed in Contact with Strips of Stomach and Intestine.

Experiment.—The stomach of a recently killed rabbit (at a period of digestion) was removed, emptied of its contents, washed and divided into two portions along the curvatures. One-half was then cut into small strips and placed into a beaker with about 50 cub. centims. of water, and 20 cub. centims. of a solution of grape sugar containing ·138 grm. of glucose, and exposed for one hour and a half to a temperature of 120° F. (48·8° C.). The contents of the beaker were now boiled with some crystals of sulphate of soda to precipitate the albuminous matters and prepare for testing, filtered (through glass wool), washed, and the filtrate made up to 100 cub. centims., and divided into two equal parts. One part was titrated at once with the ammoniated cupric test, whilst the other was subjected to boiling for one hour and a quarter, with 1 cub. centim. of sulphuric acid (giving a 2 per cent. solution) in a flask affixed to a tube connected with an inverted condenser to prevent concentration through loss during boiling. When cold the contents of the flask were neutralised with potash, and brought to a known volume, and this liquid then titrated.

The two titrations showed a cupric-oxide reduction reckoned for the whole product equivalent to that producible by the presence of the subjoined amounts of glucose :—

Before sulphuric acid	...	...	...	·080 grm.
After ,, ,,	...	...	...	·134 ,,

Thus ·138 grm. of glucose was taken, and by contact with the strips of stomach was converted into a body possessing a cupric-oxide reducing capacity equivalent only to ·080 grm. of glucose. By boiling with sulphuric acid this body was carried back into glucose, and it will be observed that the amount of glucose discovered after conversion and reconversion was ·134 grm., against ·138 grm. started with. The cupric-oxide reducing power of the body produced was not far removed from that of maltose, the figures presented, ·080 and ·134, standing in the relation of 58 to 100, instead of 61 to 100, the figures for maltose. As a check the other half of the stomach was also cut into strips. These, however, instead of being used at once were first boiled with the 50 cub. centims. of water, and then the 20 cub. centims. of the solution of grape sugar containing ·138 grm. of glucose were added. The beaker was exposed alongside the other for an hour and a half to 120° F. (48·8° C.). The same subsequent process of procedure as that which has been described was carried out, and the results yielded stood as follows :—

Before sulphuric acid	...	...	...	·130 grm.
After ,, ,,	...	...	...	·134 ,,

The figures here show that glucose existed. Hence with exposure of the strips to the temperature of boiling water previous to being placed in contact with the glucose no effect was afterwards exerted. The small intestine of the animal was also used in identically the same manner. All the products, indeed, belonging to the experiments were placed side by side and treated alike; as there was enough intestine for the purpose, a duplicate observation was made in

that part of the experiment where no preliminary boiling was resorted to. The same solution of grape sugar was used, and the same quantity—viz., 20 cub. centims., containing ·138 grm. glucose. The results of titration yielded the following figures as representing the cupric-oxide reducing power of the product before and after subjection to the converting action of sulphuric acid expressed as glucose.

Intestine not subjected to Boiling before Employment.

OBS. 1.	Before sulphuric acid	...	·086 grm.
	After ,, ,,	...	·138 ,,
OBS. 2.	Before ,, ,,	...	·086 ,,
	After ,, ,,	...	·134 ,,

Intestine subjected to Boiling before Employment.

	Before sulphuric acid	...	·130 grm.
	After ,, ,,	...	·124 ,,

With the intestine, therefore, as with the stomach, no change was induced in the glucose where the strips were previously subjected to the influence of a boiling temperature. On the other hand, where the strips were employed before their activity was destroyed, the glucose was moved so as to make the product possess a reducing power (expressed in percentage relation) of 62, instead of 100, in the one case, and 64, instead of 100, in the other.

Experiment.—A similar experiment was performed with the employment of a larger quantity of glucose; 20 cub. centims. of a solution of grape sugar, containing ·400 grm. of glucose, were used, and the time of exposure to 120° (48·8° C.) was two hours.

Duplicate observations were made in the case of the stomach and intestine taken previously to being boiled. The results obtained stood as follows:—

·400 grm. of Glucose in Contact with boiled Strips of Stomach (Rabbit).

	Before sulphuric acid	... ...	·384 grm.
	After ,, ,,	... ...	·370 ,,

·400 grm. of Glucose in Contact with the fresh Strips of Stomach.

OBS. 1.	Before sulphuric acid	...	·232 grm.
	After ,, ,,	...	·384 ,,
	Relation 60 to 100.		
OBS. 2.	Before sulphuric acid	...	·216 grm.
	After ,, ,,	...	·384 ,,
	Relation 56 to 100.		

·400 grm. of Glucose in Contact with the boiled Strips of Intestine.

	Before sulphuric acid	... ...	·422 grm.
	After ,, ,,	... ...	·370 ,,

·400 grm. of Glucose in Contact with the fresh Strips of Intestine.

OBS. 1.	Before sulphuric acid	...	·222 grm.
	After ,, ,,	...	·370 ,,
	Relation 60 to 100.		
OBS. 2.	Before sulphuric acid	...	·200 grm.
	After ,, ,,	...	·384 ,,
	Relation 52 to 100.		

A marked consistency runs through all these results, except to a certain extent in the figures given by the titration of the product from the boiled strips of the intestine before treatment with sulphuric acid. Here the result comes out rather too high, but absolute accuracy can scarcely be expected to be obtained in every instance. The little loss otherwise noted throughout from the ·400 grm. of glucose used may not unnaturally be looked for.

No further comment with regard to these experiments is needed. Looked at as a whole they speak in unmistakable terms, and furnish a check within themselves.

(To be continued.)

A POLICE CONSTABLE who had been placed on fixed duty near one of the open sewer ventilators in the public road recently died in the Croydon Infirmary of typhoid fever, followed by pleuro-pneumonia, supposed to have been caused by his having inhaled the escaping gas from the sewer.

CASE OF

MANIACAL DELIRIUM TREATED BY THE COLD DOUCHE.

BY THOMAS BARLOW, M.D., F.R.C.P.

ON the evening of March 30th I was asked by Mr. Gabe, of Farringdon-road, to see with him a man who was apparently suffering from a severe attack of delirium tremens. He was thirty years of age, and a barman by occupation. He was said to be a "moderate drinker;" there was no history of any drinking bout immediately preceding this illness, but the alcoholic supply had been unlimited. He had not slept for three nights and four days; he had had many delusions, was much troubled with various objects in the room, more especially the bedclothes, which he was anxious to get out of his way. During the last twenty-four hours he had become much worse; it was doubtful if he recognised anybody; he had struck his wife and threatened to murder her; two men were required to keep him in bed. His bowels had acted, and he had taken a little food; but, as I have said, he had had no sleep, notwithstanding the administration of large doses of bromide, chloral, and morphia. The patient was an active, fairly developed young man, sitting up in bed when I saw him at eleven o'clock, with a wild, bothered look, muttering incoherently and pulling violently at a sheet which was in front of him. He was hardly in a mood favourable to investigation by ordinary methods. It was impossible to feel his pulse as he would not keep his hand still. On my making some slight attempts at physical examination, he told me he should "do for me" if I did not leave him alone. There was some tremor about his lips; he was much flushed; there was no rash; but his skin everywhere was dry, hot, and pungent to the touch. This struck me as noteworthy, because in all the cases that I could recall of very severe delirium tremens, the skin had been bathed in sweat. It appeared undesirable to order him any more narcotics, and my inclination would have been to let him alone, aiming simply at giving him food, but that evening I had read in THE LANCET[1] Dr. Broadbent's record of "two cases illustrating the successful employment of the cold douche." One of the two was a case of delirium tremens, and I suggested to Mr. Gabe that we should follow on the lines indicated by Dr. Broadbent. The bed and bedclothes were removed, and a large mackintosh coat was spread over the mattress, and over this a piece of sacking was placed. The patient was then stripped, and a spongeful of cold water squeezed down his neck and back, and then freely splashed over his face and chest. It quieted him immediately. He said it was nice, and he was well pleased to have it repeated. He was then vigorously rubbed and dried, and some strong broth was given to him, which he thoroughly enjoyed. During the rubbing process I noticed that he gave one short loose cough. The bed was soon made; there was not the slightest difficulty in getting the patient to lie down and close his eyes, and presently he dropped into a quiet sleep. We left his friends with the instruction that if he became violent again the same treatment was to be repeated, and that he was to have no physic, but only some egg and milk or broth whenever he should awake. His wife was also told by way of precaution that it was by no means infrequent in such cases (even when not treated by cold douche) to get pneumonia, and that therefore this was one of the things for which to be prepared. The patient slept quietly for four hours, then woke and was violent again. He was douched by the friends in the same way as before, and once more lay down and slept quietly. He had no delirium after this. A day or two subsequently, as I learnt from Mr. Gabe, the patient had a very slight cough and once expectorated a small quantity of blood-stained sputum. There was a little bronchial breathing at the left base, which soon cleared up. Thirteen days later, for my own information, I saw him with Mr. Gabe. He was perfectly rational; his tongue slightly granular. He had a good appetite, but looked thin, pale, and pulled down, like one recovering from a severe illness. His temperature was 99°. He had a very slight occasional dry cough, and then complained of a little pain, referred to

[1] March 24th, 1883.

the left posterior base, where scraping friction was to be heard, and where the resonance was slightly defective. He made a good recovery without the need of stimulants, and was strongly recommended to change his occupation.

Remarks.—Although it may be granted that the result of the treatment in this case was satisfactory so far as arresting the maniacal delirium was concerned, those who are timid with respect to the application of cold may reasonably ask if the douche was not responsible for the attack of pleuro-pneumonia from which the patient evidently suffered. On the contrary, I think there is reason to believe that when I saw the patient on the 30th with Mr. Gabe, he was at that time suffering from pneumonia (although it was impossible to prove it), and that his delirium was not more violent than one sometimes sees in drinking men the subjects of a pneumonic attack. His hot, dry, pungent skin was consistent with that possibility, and the short, loose cough which he presently gave was also consistent with it. I found on subsequent inquiry that the very first symptom from which he suffered was some severe rigors the night before the delirium commenced—that is, four days before the cold douche was applied. It is possible that the application of cold was of benefit in reducing his temperature, but I cannot help thinking that its chief benefit was as a nervous shock. We gave it with that view, and rubbed him very thoroughly afterwards so as to promote a good reaction and prevent his getting any chill. I know that Dr. Cayley (whose experience in the cold bath treatment in fever is very considerable) holds that the nervous shock is an important element. Everybody who has employed cold baths extensively must have been struck with the marked improvement in intelligence which often takes place when a delirious patient is placed in the bath. In this case a cold bath was not to be got and the douche answered quite as well and gave much less trouble. "One swallow does not make a summer," but I have ventured to record this case as a pendant to those of Dr. Broadbent. There are some others referred to in Neale's "Digest." It would be foolish to maintain that opiates have no place in the treatment of maniacal delirium, but I presume there are few physicians who cannot recall cases in which considerable and repeated doses of these remedies have been given without the slightest obvious effect on the delirium, and other cases in which even moderate doses have been followed by a sleep from which there has been no waking. Perhaps those who can recall such examples may feel inclined to give the cold douche a trial.

A CASE OF

COMPOUND FRACTURE OF THE HUMERUS TREATED BY RESECTION AND WIRING TOGETHER OF THE FRAGMENTS.

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T. R——, aged thirteen, a healthy boy, was caught in some machinery on February 19th, 1883, and received the following injury: A lacerated wound five or six inches in length extending somewhat spirally round the middle of the upper arm from a point in front of the insertion of the deltoid across the triceps to the inner side of the limb. The triceps was almost completely severed, the biceps considerably lacerated, and the humerus fractured about its middle; the arm was hanging loosely by the tissues on the front and inner side. The periosteum was stripped off the fractured ends of the bone for about an inch. The musculo-spiral nerve was separated from its surroundings and stretched tightly over the upper fragment, about three inches of its course being exposed. The forearm was fractured about the middle, but there was no wound there nor other injury. The vessels and nerves on the inner side of the limb were intact. Taking into account this last fact and the youth of the patient, and, further, that it was his right arm that was injured, it was determined to attempt to save the limb. First the ends of the fractured humerus were sawn off, about three-quarters of an inch being removed from each fragment; next two stout silver wires were passed in the usual way through the fragments, and they were drawn together and the wires twisted. Next catgut sutures were put into the separated halves of the triceps, in order, if possible, to preserve its action. The wound was cleaned and carbolised as thoroughly as possible (Listerian dressings, &c., being employed). The skin was brought together, drainage-tubes being inserted, and the fracture of the forearm was then put in good position. The ends of the wires were brought out through the wound.

The further progress of the case was uneventful. There was some rise of temperature, and a good deal of discharge until the sloughs cleared away; but on the whole the case went on uninterruptedly well. The dressings were changed daily. On March 21st the spray was discontinued, the wound being superficial, except where the wires protruded, and at one other spot. At first the arm was fixed upon a simple inside angular splint; but this was soon afterwards changed for one with an interruption opposite the wound, with a short Gooch splint for the forearm. By March 21st there was evidently considerable union of the fragments of the humerus, and the forearm had united. The boy's general health was also good, although he had evidently suffered a good deal from the shock and from loss of blood, which had been considerable. At this date it was noticed that there was complete musculo-spiral paralysis. Soon after the limb was put up in plaster-of-Paris, and the boy sent to the convalescent hospital. On August 22nd the wires were cut through and drawn out. Shortly after a sequestrum, consisting of about half the circumference of the lower fragment and about a quarter of an inch wide, came away. The arm was quite strong. In November a larger sequestrum, containing the two upper wire holes, was removed. At this date the musculo-spiral paralysis, which had gradually been improving, was no longer perceptible. Now, Nov. 24th, the boy is well, has returned to his work, and the arm is nearly, though not quite, as strong as before. He has a little stiffness about the elbow, but can move it through two-thirds of its full range; the wound is reduced to two small, rapidly closing sinuses, there is no sign of paralysis, and the bone is rather more than its normal thickness.

The case is an encouraging one, and by those who saw it is looked upon as a most satisfactory piece of conservative surgery; as such it is, I think, worthy of record. One point in the treatment might have been altered: the wires might have been cut short and hammered down, as in Mr. Lister's plan of treating fractured patella; though in this case I do not think it would have expedited matters, for the separation of the sequestra would necessarily have kept the wounds open. There has been no interference with the growth of the limb, which is only about three-quarters of an inch shorter than the other, although nearly two inches altogether were removed either at first or as sequestrum.

Jan. 3rd, 1884.—The wound is now healed and the arm sound.

Manchester.

ON SUDDEN DEATH DURING, BUT NOT FROM, CHLOROFORM NARCOSIS.

By F. JUNKER, M.D., M.R.C.S.

LAST winter at Berlin, where I followed the surgical work of the different hospitals, I happened to visit Prof. Bardeleben's clinic in the Charité, when an operation for necrosis of the upper third of the femur was about to be performed. Prof. Bardeleben took occasion to point out the danger of sudden death from fatty embolism of the capillaries of the lungs in cases of fracture or other injury of the long bones, especially of the femur in its upper third and at the neck, and in this special case he enjoined particular attention and care in the administration of chloroform. He, at the same time, expressed his firm conviction that many cases of sudden death during narcosis were due rather to fatty embolism than to the effects of the anæsthetic. That sudden death may frequently take place from embolism of the capillaries of the lungs, caused either by entrance of air or fluid fat, is a well-known fact. Air embolism is brought about generally by wounding, less frequently by suppurative destruction, of the larger veins of the lower part of the neck, of the superior thoracic region, of the axilla, occasionally of the upper, but never of the lower, extremities. Fatty embolism follows

extensive laceration or contusion of the subcutaneous fatty cellular tissue, and especially of the medulla of the long bones. Embolism prevents oxidation and arrests the flow of the arterial blood to the medulla oblongata. Smaller quantities of air or fat in the blood of the capillaries may be rendered more or less innocuous by diffusion or oxidation. Embolism from fluid fat will be found in the lungs almost after every extensive fracture, and may be easily discovered by the microscope. By raising a small portion of pulmonary tissue with fine forceps, removing it with a pair of curved scissors and spreading it out under water, the capillaries will be seen filled with shining, highly refracting globules of fat.

Professor Bardeleben's remarks on fatty embolism were unfortunately confirmed by a fatal case occurring in his clinic on June 24th last.

An artisan, of strong healthy constitution but intemperate habits, who was suffering from a fracture of the neck of the femur, was put under chloroform. After three to four minutes, having had only three drachms (ten grammes) of the anæsthetic given with Esmarch's (Skinner's) mask, and before he was completely under its influence, the patient suddenly ceased to breathe, and almost immediately afterwards also the action of the heart stopped. Every means of resuscitating life were resorted to—viz., artificial respiration, tracheotomy, electricity, injections of strychnia,—and were continued for one hour and a half, but without avail.

Professor Bardeleben during these endeavours to save life expressed his doubt that the fatal accident was caused by intoxication from the narcotic, which was of the purest quality of Schering's chloral-chloroform, and of which only a very small quantity (three drachms) had been administered. Most likely, the Professor argued, the death was caused by fatty embolism. The patient had his femur fractured at the neck, where the bone is particularly rich in marrow. Some of the fluid fat of the latter may have been pressed by the injury into the veins, carried on into the right auricle and through the right ventricle into the lungs.

The post-mortem, which took place on the following day in Prof. Virchow's Pathological Institution, verified the correctness of this diagnosis. It was proved that chloroform was not the cause of the death, but that it was a case of fatal fatty embolism. The vessels of the lungs, particularly the capillaries, were filled with minute particles of fluid fat, which, conglomerating, opposed a mechanical impediment to the circulation by blocking up the lumina against the onward flow of the blood. The result of this was anæmia of the lungs and hypercarbonisation of the blood. Thus, by the insufficient quantity and the bad condition of the blood, the vital organs—the brain, the heart, and the lungs—were rendered unfit to carry on their functions.

May not death in similar cases have been frequently unjustly ascribed to chloroform and other anæsthetics?

Hyde Park-place, W.

FRACTURE OF THE SKULL; TREATMENT BY TREPHINING; RECOVERY.[1]

BY ARTHUR WATSON, M.D., C.M. EDIN.,
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AND
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A FEW days later than March 25th, 1883, I [Dr. Watson] was summoned, together with my colleagues of the Hulme Dispensary, by the house-surgeon, Mr. Deaper, to see a boy, Thomas O——, about eight years of age, upon whose head a ladder was stated to have fallen. On arrival we found a boy lying on a sofa, perfectly unconscious, in which condition he had been since the accident, and lay in his clothes just as he had been carried in.

On examination we found a small scalp wound over the right frontal bone, through which could be felt a fissure about an inch in length. After consultation it was decided that for the present operative interference was not justifiable, and it was arranged that the nurse of the institution should feed the patient per rectum frequently. Ice was applied to the head and a purgative enema given. The boy's chances of recovery seemed to us all remote in the extreme, and none the less so owing to the fact of his having no father, his mother being a dispensary patient just on the point of going into the workhouse hospital with pulmonary phthisis, and the extreme poverty of the neighbours, who alone could and did take the parent's place in tending the boy. I arranged with the house-surgeon for my seeing the patient frequently, but regret that no daily record of his progress was made; however, writing from memory, I may state that the changes in the temperature, respiration, and condition of the boy generally were slight during the first few days. Healthy pus welled from beneath the scalp, the house-surgeon dressing the wound with carbolic lotion or oil and a pad being placed over the fissured bone, which was partly denuded of periosteum. After a week had elapsed, and there being no improvement, and the unconsciousness being scarcely at all recovered from, I decided that trephining could alone give the child a chance of life, and I was the more led to this conclusion by the fact of the existence of a punctated depression in the bone, which I believed was causing the prolonged coma. Accordingly I selected a point of sound bone, about a quarter of an inch from one edge, and removed a semicircular piece of bone from that side of the fissure, and the remainder of the circle was completed by two pieces from the other side, evidencing that the fracture radiated. On removing the pieces and getting room for my finger I found underlying the unremoved bone a partly detached fragment from the inner table, lying not quite flat and pressing upon the dura mater. I removed this, some gentle force being necessary, but believed that no laceration of the membrane occurred. After the operation I distinctly noticed that the breathing was less shallow; but no improvement followed for a day or two, when consciousness slightly returned, as indicated by the boy's occasionally taking a teaspoonful of milk, &c. On about April 12th, the boy now being accommodated with another sofa in another house close by, a hernia cerebri developed, rising slightly above the outer table of the skull, and he was delirious, crying out night and day, so that his new hosts declared they could not any longer retain him. I pointed out to them how his removal to the workhouse would almost certainly cause his death; but they insisted upon it. He was taken to Withington, and on the following day, when I saw him, Dr. Orchard agreed with me that the case was hopeless.

By Dr. Orchard's permission I now add a copy of his notes dealing with the case up to its recovery:—"Thomas O——, was admitted on April 14th. State on admission: The boy was quite unconscious, screaming out occasionally as if in pain, very much emaciated, and passed everything under him. On the head the edges of the bone could be felt where it had been trephined, the space being occupied by a red, prominent, fleshy mass, pulsating and evidently tender, with a free discharge of healthy pus; pupils dilated; drooping of right eyelid; conjunctivæ insensible; pulse very weak; temperature 97·4°. He could swallow only a teaspoonful of anything at a time. The boy was apparently in a desperate condition, and not expected to live twenty-four hours. The wound was dressed in the usual way, the head kept cold, and milk given him frequently with a teaspoon. He remained much in this state for a fortnight, the temperature varying from 98° to 100°. At the end of that time consciousness began to return; he could swallow more freely, and had some command over his bladder and bowels; the tumour slightly increased in size, pus being discharged freely. He continued to improve gradually, and by the end of May was quite rational; he ate and slept well; the incontinence disappeared, and he could ask for what he required. On June 3rd there was considerable twitching of the left arm and leg and side of the face; the tumour was larger, and still discharged pus freely; otherwise he was very well and free from pain. On the 8th there was paralysis of the left arm, and on the 9th there was complete left hemiplegia; but he was quite conscious, and said he was quite well. From this time the tumour of the head diminished, the wound contracted, and by the end of July the wound had healed, and he also began slowly to recover from the paralysis. By the middle of August he could walk with a little assistance, and towards the beginning of September he walked alone, but not steadily. His general health is exceedingly good."

Remarks.—In reviewing my action in dealing with this case it may be questioned whether (1) I was justified in operating, whether the boy would not have recovered without it; and (2) whether I selected the proper time.

[1] Abstract of communication at the meeting of the Manchester Medical Society, Nov. 7th, 1883.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nullas autem esse alias pro certo noscendi vias, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

TWO CASES OF BRONCHOCELE SUCCESSFULLY TREATED BY THE SETON; REMARKS.

(Under the care of Mr. HENRY SMITH.)

THE presence of two patients in the theatre of King's College Hospital who had been treated for bronchocele by the use of the seton with most successful results afforded Mr. Henry Smith, three weeks ago, an opportunity of addressing the pupils on the treatment of the disease in question.

In the first case the patient, who was a powerful, well-built policeman, aged forty-three, had suffered for thirteen years from the enlargement of the thyroid gland, which, however, had not increased much until a few months before his admission into the hospital in May, 1881. At that time the tumour was of large size, mainly involving the right lobe, and pushing the larynx over to the left side, far beyond the median line. The measurement of the neck, taken over the tumour, was nineteen inches. Latterly the increase of the swelling had been productive of cough, dyspnœa on exertion, and general weakness, so that he was compelled to forego his duties as a policeman, and he went to a London hospital, where he was advised to have the tumour removed by operation. To this the patient would not consent, and he placed himself under Mr. Smith's care. The tumour was punctured with a small trocar and a considerable quantity of blood was emitted. A needle armed with a double hempen thread was passed through the opening, carried deeply into the substance of the swelling, and brought out on the opposite side, the threads were tied together and left to act as a seton; considerable local irritation was produced, accompanied with free purulent discharge, and at the end of two weeks the patient suffered from a good deal of febrile disturbance, and the seton was withdrawn. A drainage-tube was passed into one of the openings, and through this much discharge of offensive débris took place, the tumour gradually diminished in size, and the man left the hospital after several weeks, still wearing the drainage-tube. He presented himself from time to time until the tube was taken out altogether. When exhibited to the students there was no appearance of the tumour beyond a very slight thickening, and the man was in perfect health, the neck measuring only fifteen inches and a half.

The second case was that of a woman aged sixty-eight, who had suffered from bronchocele for sixteen years, for which she entered the hospital in November, 1882. The tumour was even considerably larger than that of the man, involving the whole of the gland, and producing so much distress that the patient could not lie down in consequence of the dyspnœa which was occasioned, and which had become greatly increased during the last few weeks. As it was necessary to do something, and excision was out of the question in such an aged and unhealthy subject, Mr. Smith introduced a double thread across the tumour and retained it. Comparatively little irritation was produced, but there was a free discharge, and consequently the seton was retained for a period of sixteen weeks, when it was removed. Free discharge of purulent matter and débris continued, the tumour rapidly decreased in size, the difficulty of breathing and distress entirely left her, and when examined at the hospital there was no more trace of the growth than in the instance of the man.

In his remarks on these cases, Mr. Henry Smith stated that one of the achievements effected by antiseptic surgery was the removal of bronchocele by operation with very much less danger than obtained in former days. In fact the operation of excision of the enlarged thyroid was looked upon with extreme disfavour by surgeons in this country up to the time of the introduction of antiseptic surgery. It was, however, very important that the surgeon should have it in his power to adopt a less severe measure for the cure of this disease, and he was very glad to be able to show them these two cases, as they so well illustrated the advantages of the seton, a plan of treatment which he did not bring before them as original, for it was described in the text-books in surgery. He himself, however, had never been taught to adopt this method, and he had neither used it previously, nor had he ever seen any other surgeon adopt it. The success of these cases was so great that he most earnestly recommended its adoption in future instances, more especially where excision was not thought proper, or where the patient would not submit to its performance. He wished to draw their attention to the fact that although the treatment was exactly the same in these two cases, in the one, that of the healthy man of middle age, the effect of the seton was to produce so much irritation that it was needful to withdraw it in two weeks, whereas in the old weakened woman the effect was so mild that it was necessary to retain the threads for many weeks, yet in each case the result—viz., the gradual and complete destruction of the growth—was happily accomplished after the lapse of about the same period of time.

GUY'S HOSPITAL.

DISEASE OF ELBOW-JOINT FROM NECROSIS OF HEAD AND NECK OF RADIUS; LUNG MISCHIEF; AMPUTATION; RECOVERY; DISAPPEARANCE OF LUNG SYMPTOMS.

(Under the care of Mr. BRYANT.)

FOR the report of the following case we are indebted to Mr. Sandoe.

W. C. G——, aged thirty-seven, a labourer, was admitted into Job ward on April 5th, 1883. The following notes were taken: He has always been a strong healthy man. There is no history of consumption, gout, or rheumatism in the family. Six months ago he first noticed a swelling occupying the front surface of the upper third of the right forearm. He poulticed this, when it disappeared, and the present swelling appeared on the outer side of the upper third of the forearm, and this has gradually increased until admission.

On admission the patient presented the following appearance. He is a dark thin man, and the right forearm is much swollen at the upper third, and the lower fourth of the arm is swollen on each side of the olecranon process and above in front of the triceps. At a spot one inch below the elbow fluctuation can be felt. There is no discolouration; the patient suffers no pain. Round the elbow of the right arm the measurement is eleven inches, against nine inches on the left. Two inches below the elbow the right measures ten inches and a half, against eight inches and a half on the left. Fluctuation can be felt on either side of the olecranon, and also on the outer surface of the arm, but fluctuation cannot be felt from one side of the olecranon to the swelling on the opposite side of the outer surface of the forearm. The arm is in a semi-prone position, and cannot be pronated or supinated in active motion, but admits of some pronation in passive motion. Cannot flex or extend the right arm for more than an angle of 130° to that of 70°. Passive motion about the same. There is great clicking to be felt in the joint on extending and flexing the arm. This causes no pain. There is free movement of the fingers.

April 10th.—An incision was made on the outer side of the upper third of the forearm. A little pus came away, and about two or three drachms of caseous matter. Caseous bone could be felt, but no dead bone. Arm put up on an anterior rectangular splint.—24th: Swelling of the arm about the same. The incisions were made longer and deeper, when a quantity of caseous matter came away, and a little blood.

May 5th.—Fresh incision made an inch and a half above the elbow-joint; some blood came away. Drainage-tube put in. Linseed poultices constantly applied.—7th: Arm better; less redness and swelling.—12th: Dr. Pye-Smith saw the patient, and reported: "There is disease of left apex, not probably of long-standing, and most likely connected with disease of the elbow. The best treatment for checking this lung disease would be to remove the source of the suppura-

tion."—27th: The lower third of the arm and the upper third of the forearm much swollen and œdematous; skin dusky-red and brawny; wound on the outer side of the joint two inches and a half vertically by two inches horizontally; surface covered with pale granulations, caseating and yellow; edges of skin blue and undermined.—22nd: Under chloroform the arm was amputated three inches above the elbow, leaving anterior and posterior flaps. The arteries were twisted and the veins ligatured. There was a good deal of hæmorrhage. On opening the elbow-joint all the cartilages had disappeared, owing to the suppuration. In the joint was found the head of the radius, which had necrosed off from the shaft, and was the immediate cause of the disease.—26th: The stump dressed daily. The parts have united nicely, and look well.

June 8th.—Stump looking well; had a slight rigor at 3 P.M.—9th: Stump looks red, and the redness extends to the shoulder. A mixture containing fifteen minims of tincture of perchloride of iron was ordered to be taken three times a day.—10th: Slight erysipelas of stump; stump painted with collodion.—20th: Stump looking healthy. Ten minims of dilute nitric acid, ten minims of tincture of nux vomica, to one ounce of compound infusion of gentian, three times a day.—26th: Dr. Pye-Smith saw the patient again, and reported: "I find unmistakable improvement in the state of the lungs. There is no active mischief, and but little evidence to indicate the existence of the previous broncho-pneumonia. The temperature, tongue, appetite, and pulse agree with this. I should recommend steel now. I should hope for permanent recovery."

July 7th.—The patient went out convalescent. A mixture containing ten minims of the tincture of perchloride of iron, half a drachm of glycerine, and one ounce of infusion of quassia, was prescribed, to be taken three times a day.

In November the patient reappeared. He had lost all symptoms of chest disease.

SUSSEX COUNTY HOSPITAL, BRIGHTON.

CASE OF RENAL TUMOUR; EXCISION OF KIDNEY; DEATH; REMARKS.

(Under the care of Mr. JOWERS.)

FOR the following notes we are indebted to Mr. Bernard Scott.

S. M——, aged fifty-five, a married woman. The patient was admitted on May 15th, 1883, complaining of an abdominal swelling. This she first noticed twelve months ago; at this time it was the size of a fowl's egg, and pain on stooping drew her attention to it.

On admission the patient presented the following appearance:—She is a fairly healthy-looking woman, but is rather stout and anæmic. She has a constant dull pain in the abdomen on the left side. There is here found a hard movable mass, about the size of a large cocoa-nut. It is rounded in shape, smooth, and somewhat elongated, with its long axis running from a point an inch and a half to the left of the umbilicus into the left loin. It reaches nearly as high as the left floating ribs; below it just encroaches on the iliac fossa. Examination causes considerable pain. The tumour is not pulsatile; it ascends and descends with respiration; it is not influenced by firm pressure; it is not notched; it is dull on percussion. The descending colon does not appear to traverse it. The splenic dulness is distinct from it. When on her stomach, the left loin is natural, and is resonant on percussion. The swelling does not appear to spring from the pelvis. Tongue clean; appetite poor; some nausea: no jaundice; digestion good; bowels confined; motions natural; urine, specific gravity 1020; acid; slight cloud of albumen. She has had eight children. The last child was born twelve years ago. She has had no miscarriage. Menstruation ceased three years ago, and had till then always been regular and normal. There is a strong tendency to consumption in the family.

May 25th.—The patient is taking an aperient mixture. Her bowels act two or three times a day. To-day her urine is almost black, and under the microscope presents numerous blood-corpuscles. She now says that previous to her admission into the hospital she passed blood in her urine on two or three occasions.—30th: The hæmaturia continues. She has more pain in the tumour.

June 18th.—To-day she is considerably worse. The pulse is at times almost imperceptible; tongue dry; lips blue; urine rather clearer; no apparent change in tumour.—8th: She has now recovered from her collapsed condition. Five-grain doses of quinine were given three times a day. The hæmaturia has quite ceased.—15th: The urine again contains a small amount of blood. General health has somewhat improved.—19th: The patient being rendered wholly incapable of any activity, and as it was evident that her health was rapidly suffering from the pain, which was great, and from the frequent loss of blood, Mr. Jowers proposed some operative measure, and she readily assented. Having been brought under the influence of the anæsthetic mixture an incision was made from the umbilicus to the pubes. On introducing the hand it was found that the tumour was covered by the peritoneum lining the back of the abdomen. A Thompson's trocar was driven into the tumour, and after some difficulty a quantity of opaque yellowish fluid was withdrawn. This measured a pint, and smelled of urine. The peritoneum was then divided, and the mass in the loin separated from the subperitoneal fat and surrounding parts by the hand. The cyst wall broke, and a quantity of loose flocculent material, resembling the fibrin of an old hæmatocele, escaped. The cyst was in connexion with the lower part of the left kidney. The renal vessels and ureter were tied with thick silk and the ends cut short. Besides this, only one vessel was tied, for which catgut was used. Meantime, the intestines and peritoneal cavity all round the cyst were protected with warm sponges. When the peritoneum, as well as the loin, had been completely dried with sponges, the wound was closed and boracic wool bandaged on. Listerian precautions were not employed. The lower end of the kidney was found to be converted into a large cyst containing partly the fluid which was withdrawn and partly the material above noticed. On the cortex, at the junction of the cyst and healthy kidney, was a suspicious looking piece of white soft tissue, rather larger than a small nut. The kidney itself was anæmic, and only two pyramids could be seen; these were at its upper end. Evening temperature 97·8°; pulse 73. She has some pain. About six ounces of blood-stained urine have been drawn off.—20th: Morning temperature 99·2°; pulse 120. The abdomen was painful when a deep breath was taken. This morning only about an ounce of urine was drawn off. 11.30 P.M.: Temperature 103·2°; pulse 135–140. During the last eight hours she has only secreted about an ounce of urine.—21st: At about eight o'clock this morning, whilst retching, she fainted, according to the nurse's account, and did not rally, but died almost at once. Barley-water only had been given by the mouth, and nutrient injections of beef-tea and brandy by the rectum. Permission for a necropsy could not be gained.

Subjoined is an account of the pathological character of the tumour by Dr. W. Hale White:—"The specimen consisted of a small piece of tissue [a small piece where the cyst and kidney joined was sent to Dr. White] about half an inch each way. It was much softer at one extremity than at the other. The soft part seemed pretty distinct from the rest and reminded one of fat or caseous tissue. It did not harden well, and hence was difficult to cut. It broke away in minute fragments on the razor as caseous matter would. Sections were cut with a freezing microtome and stained in logwood. Those from the soft part contained hardly any normal structure; perhaps in each section there would be only one or two Malpighian capsules, just enough to show that kidney was under examination. The rest of the tissue was so crammed with small cells as to completely obscure everything else. There were few vessels, but they were not thickened. There was no increased developement of connective tissue, no cysts, no minute abscesses, and no evidence of new growth. Some of the Malpighian tufts were very small, and did by no means entirely fill these capsules. Very frequently in this case the capsule contained some amorphous non-stainable substance, in all probability coagulated blood plasma. The harder part of the specimen agreed in all particulars with the soft, except that the changes were not so marked and there was enough healthy kidney structure to account for its being of harder consistence. Putting the results of this examination with Mr. Scott's description of the kidney as seen after excision, it seems to be an example of scrofulous kidney breaking down at one part to form a cavity, and that the sections I have made are just on the margin of this cavity, the softer part representing its immediate wall."

NEWCASTLE-UPON-TYNE INFIRMARY.

MOIST GANGRENE OF FOOT AND LEG TREATED BY AMPUTATION THROUGH THE MIDDLE OF THE THIGH; RECOVERY; REMARKS.

(Under the care of Mr. PAGE.)

A GARDENER, aged fifty-nine years, a very intemperate man, was admitted on Sept. 13th, 1883, in consequence of moist gangrene of the right foot and leg. The disease commenced thirteen weeks previously, and it was still progressing. All the toes had separated. The whole of the foot was dead, and a large patch of gangrene had just appeared on the outer side of the leg. The stench was intolerable, and the man was reduced to such an extent by pain and exhaustion that it seemed probable if unrelieved he would not survive many days. His whole arterial system was in a very pronounced condition of calcareous degeneration. On Sept. 14th the limb was amputated through the middle of the thigh. The femoral artery was so much diseased that an attack of secondary hæmorrhage was fully anticipated; but all went well, and on Sept. 24th the antiseptic dressings were discontinued, as the wound was entirely healed. The patient remained in hospital till Oct. 21st, and was then discharged with a good sound stump.

Remarks by Mr. PAGE.—Whether it is better to amputate or not in cases of spontaneous moist gangrene, and if so, where and at what stage of the disease, are questions upon which there is room for much difference of opinion. In every instance that I have waited for a line of demarcation to form my patient has died exhausted. In this case the relief which followed the removal of the limb was immediate; the tongue became moist, the look of prostration soon passed away, the patient was at once able to sleep and to eat, and the wound healed by first intention.

Medical Societies.

MEDICAL OFFICERS OF HEALTH SOCIETY.

A MEETING of this Society was held on Friday, Dec. 21st, 1883, Dr. T. O. Dudfield, President, in the chair.

Dr. J. W. TRIPE read a paper on the Artisans and Labourers' Dwellings Acts, of which the following is an abstract:—He dwelt chiefly upon those sections of the Acts which were defective, and he said that much delay was occasioned by the duty of carrying out the provisions being imposed upon two different local authorities, the Board of Works and the vestries. The pecuniary position of the inhabitants of these dwellings must also be considered; costermongers and others required a special kind of accommodation; and then, also, there were some whose habits prevented their being received into model dwellings. Overcrowding was one of the chief difficulties with which a medical officer of health had to contend, but if a landlord were able to obtain from the magistrate an order for the eviction of a tenant after the medical officer of health had given a certificate that the house or room was unfit for human habitation, and he then did not use his powers, he should be made to suffer the penalties inflicted on him for allowing his tenants to inhabit such houses. Uninhabitable dwellings may be divided into two classes, those which are structurally or by their surroundings unfit for human habitation, and those which could be made habitable by alterations or ordinary sanitary improvements. The value of the houses should alone be paid, taking into consideration their present condition, and without addition for compulsory purchase, and no house should be allowed to be occupied after it had been legally decided to be unfit for habitation, even during an appeal from the decision. The rebuilding where unhealthy dwellings have been pulled down should never be undertaken by the local authority, but is most likely to succeed if left to private enterprise, assisted by advances from persons willing to take shares in building such houses. The houses capable of improvement can be dealt with under the present laws if increased powers were given to local authorities and their officers, and if the 35th section of the Sanitary Act were to be put in force all over the metropolis. The chief alterations of the law which are desirable may be summed up as follows:—That there should be a central authority to whom all reports of houses structurally unfit for human habitation should be referred, and that improvements should be made in the cost of, and the procedure for, acquiring these houses and the land upon which they are built, as well as the regulations under which new buildings are to be erected. That houses which can be rendered fit for habitation without being pulled down should be dealt with by the local authority. That regulations should be made for the whole of London, under the 37th section of the Sanitary Act, for enforcing a periodical cleansing and repairing of houses let at a less rental than £20 a year, and of all houses let in lodgings; that a register should be kept at the office of the local authority for registration of the name of the owner; that the local authority should be able to close the whole house after the owner had been summoned before a magistrate for penalties for neglect, provided that a second notice should be served upon the owner giving him a reasonable time previously to taking such a step.

Mr. WYNTER BLYTH then gave an account of the working of the Artisans and Labourers' Dwellings Acts in his district, Marylebone. He said that in only one instance had Mr. Cross's Act of 1875 been applied, the first scheme having been submitted to the Board of Works in 1876, and then containing four blocks, or unhealthy areas. Of these, one alone was taken up by the Board, but two of the remaining three have since been dealt with under Mr. Torrens' Act. The buildings demolished by the Board of Works contained 800 persons living in 383 tenements, and the rent was about 2*s.* a week; the death-rate of this area was but 18 per 1000, but that did not include the many who died in hospitals and workhouses. Two years after the representation was made a provisional order was obtained, but seven years will have elapsed before the new buildings can be erected, and of course they will all be more highly rented. The total number of people displaced since 1868 in Marylebone by the working of Mr. Torrens' Act amounts to 1181. Successive reports had to be made in more than one case on the same premises; thus, houses reported upon in 1877 had to be repaired twice before the surveyor considered that they must be demolished. The difficulty arising from the Purchase Clause in the Act has only once, and that quite recently, occurred in all the cases with which Mr. Blyth has dealt, but he believes that it is owing to the fact that the greater part of his district is composed of large estates. The leases have been within the twenty-one years' term mentioned in the Act, the freeholder has not objected, the leaseholder could be ignored, and in one or two cases where the section might have been applied, probably the owner was ignorant of his power. The case which occurred recently, in which notice was given to the authority to purchase, is still under arbitration, and Mr. Blyth deferred making further mention of it. As to the effect of the improvements on the poor, he stated that of the 1000 people displaced in his district a third was of the criminal class, but the rest were of the very poor, who paid with difficulty the comparatively low rent of their old tenements, and who could not possibly pay the higher rent of the few new houses which had been erected. If every vestry had worked the Artisans and Labourers' Dwellings Act thoroughly, an appalling amount of misery, of overcrowding, and poverty would have been the result. The condition of the poor, therefore, admits of only one remedy—building, if it be possible as a commercial undertaking, healthy tenements, for which the weekly payment should not exceed a tenth of their weekly wages.

In the discussion which followed, the President, Dr. James Edmunds, Dr. Dixon, Dr. Saunders, Dr. Bate, Mr. Greenwell, and Mr. Jones took part.

CAMBRIDGE MEDICAL SOCIETY.

Slow Compression of the Spinal Cord.—Retention of Urine caused by retained Menses and Imperforate Hymen.—Paralysis of Two of the Leg Muscles.

A MEETING of this Society was held on October 5th, Professor Humphry, F.R.S., President, in the chair.

Mr. LAURENCE HUMPHRY narrated a case of Slow Compression of the Spinal Cord occurring in a gentleman, aged seventy-two, active for his age, and engaged at his profession until his last illness. He had been under the care of Mr. Carter (Cambridge) for many years, during which he was

liable at times to some gastric troubles and pain after food, but was in moderately good health until June, 1882, when his first symptoms began. There was some previous history of a slight accident, in which his back was said to have been jarred, the effects of which lasted for a few days. His family history showed a tendency to gout, and his sister died of cancer of the breast. In June he first began to complain of occasional pain in his back, and his friends noticed that he stooped more than usual. In October he went to London and consulted a physician, and the opinion formed was that the liver was at fault. The pain, however, became worse, and there was found to be an obtuse bend in the lower dorsal region of the spine, with projection of the spines of the five lower dorsal vertebræ; here there was also some tenderness on pressure. The seat of the pain, however, was somewhat lower down in the lumbar region. In December there began to be some alteration in the character of the pain in the back. In addition to constant aching, he was seized with paroxysms of a peculiar kind, coming on usually at night or in the early morning, in spasms of the most severe pain in the stomach and loins, quite unbearable, and causing him to cry out and his back to become rigid, and then leaving him pale, exhausted, and covered with profuse perspiration, to return again after an interval. Up to this time there was no sign of paralysis, and sensation was normal; but the pain extended down the legs and across the abdomen, as if the nerve trunks were in some way irritated. He was seen in consultation with Dr. Paget from time to time, and in December Dr. Bristowe was also called in, and the question raised of a new growth involving the spine and nerves. At the end of December the painful symptoms abated considerably, though not entirely, and he got up and walked about, and even went out of doors. The bowels were very confined, there was a constant feeling of sickness with a troublesome secretion of sticky mucus about the fauces. Now for the first time he noticed some weakness in his lower limbs, and his gait became uncertain and unsteady. These latter symptoms increased very rapidly, so that in a few days he was quite unable to walk or turn himself over in bed. He was placed on a water bed, and there was no particular change in his condition for some weeks. In February a moxa was made on either side of the spine in the region of the obtuse bend, which was now very evident. There was some relief from the constant pain, but the paralysis became more complete and the muscles soft and flabby. Sensation began now to be impaired and reflex action was slightly exaggerated, there was also considerable retardation of sensation, so that as long as from twenty-five to forty seconds elapsed before a stimulus applied to the leg was acknowledged as felt. In other parts of the body sensation was natural. He was unable now to retain his motions if relaxed, and passed them under him. The bladder was not affected till late on in March, when one morning he was unable to pass his water, and had to be relieved by the catheter. He was provided with a soft indiarubber instrument, which he used three times a day for nearly four months, without any discomfort or cystitis. A fortnight before his death the sphincter became paralysed, and the urine dribbled constantly away. There was no great tendency to bedsores. Emaciation was considerable, but cancerous cachexia was not a marked feature. His mind was perfectly clear to the last, and he was able to transact some legal business not very long before his death. He became gradually weaker, and died on July 1st. The post-mortem examination revealed a sarcoma occupying the middle and lower dorsal region of the spine, and extending in and amongst the muscles of the back. On section the bodies and spines of the vertebræ were found softened and invaded by the new growth. The body of the tenth being crushed in had given way, so that the spinal canal at this part was much narrowed, and the cord tightly nipped just above the lumbar enlargement. The growth had not attacked the meninges or nervous structures. There was no evidence of malignant disease elsewhere. Mr. Laurence Humphry drew attention to two facts of physiological interest—the retardation of sensation and the interference with micturition. Of the latter, there was for the most part inability to pass urine; as the disease advanced downwards, there was inability to retain it. The site of the compression of the spinal cord was attributed to be the determining cause as to which condition should be present. If the cord were affected above the lumbar enlargement, difficulty in micturition was usually noticed; if lower down, the sphincter became paralysed.

Mr. WHERRY related a case of Retention of Urine caused by Retained Menses and Imperforate Hymen. The patient, a weakly-looking girl of sallow complexion, was admitted into Addenbrooke's Hospital suffering from retention of urine, having had great difficulty in passing water for the last twenty-one weeks, and having frequently required the use of a catheter. There was no hysteria. She was seventeen years old and had never menstruated. An imperforate hymen was found which protruded between the labia minora; this was incised and a large quantity of tarry fluid escaped, and continued discharging during a week. The pain and difficulty in passing water disappeared. After ten days the thick tough membrane, found to be the hymen, was freely divided, and the vaginal passage and os uteri were found to be normal. Mr. Wherry also related a case of Paralysis of Two of the Leg Muscles, occurring in an athletic undergraduate. There was complete paralysis of the extensor proprius pollicis and extensor longus digitorum of the right foot. In walking the foot was swung forward and flapped on the ground at each step. There was some numbness in the toes. No cause could be ascertained. Liniments and massage did no good. There was a fair amount of electric contractility. Fifteen applications of the powerful electro-magnetic machine (Weiss) completely cured the patient. Mr. Wherry mentioned that he had seen a similar paralysis produced by an exostosis on the head of the fibula, pressing on the peroneal nerve.

LIVERPOOL MEDICAL INSTITUTION.

AN ordinary meeting of this Society was held on Dec. 20th, Mr. T. Shadford Walker, President, in the chair.

Stenosis of the Pulmonary Artery.—Dr. JOHN HAYWARD showed the heart of a boy, aged fifteen, who had suffered since birth from cyanosis, congestion of the internal organs, dyspnœa, and other signs of congenital malformation of the heart. The organ was enormously hypertrophied, the main bulk being due to the right ventricle; it weighed twenty ounces. The auricular septum was intact, but the upper portion of the ventricular septum was deficient, and a very large aorta derived more of its supply from the right than the left side. The pulmonary valves were calcareous, and so stenosed as only to admit a crowquill, the vessel itself being extremely small, about one-sixth the size of the aorta. The ductus arteriosus was not patent, so that it was difficult to understand how the pulmonary circulation had been carried on. The first three branches of the aorta came off by a common trunk.

Chancre on the Conjunctiva.—A girl, aged eighteen, was shown by Mr. R. WILLIAMS with a primary sore on the conjunctiva. She had been nursing a child affected with ophthalmia neonatorum, and later on with snuffles, rash on the nates, and other indications of congenital syphilis. When first seen there was a sore on the conjunctiva, between the inner canthus and the cornea. It had a yellowish slough on its surface, was hard, and adherent to the deep tissues. The conjunctiva was generally inflamed, and the pre-auricular and submaxillary glands were enlarged. Mercury was given, and she was already improving. At present there had not been time for secondary symptoms to develop.—Mr. EDGAR BROWNE said he had twice met with a primary sore in this position. In the case of a young man there was a chancre at each inner canthus, traced to be due to a habit of pressing the inner corners of the eyes with his fingers and thumb. He attributed the sores to some brass cleaning paste which he used with his fingers; but, on inquiry, admitted to having made what at the Society would be called a digital vaginal examination. In the second case the chancre was placed on the lower eyelid of a young child, and no history could be obtained. In each the pre-auricular and submaxillary glands were enlarged; and he laid great stress upon the early infection of the glands as a guide to the diagnosis.

Cystotomy for Strumous Cystitis.—Dr. RAWDON brought forward the case of a boy, aged seven, who was admitted into the Children's Infirmary with severe cystitis. He was a weakly boy; micturition was very frequent and painful, and the urine contained pus and blood. Notwithstanding general treatment he was rapidly getting worse, when cystotomy was decided upon. Under chloroform the usual lithotomy wound was made upon a staff; the bladder was explored without detecting anything, and a lithotomy tube introduced. Immediate relief was experienced. Appetite

and sleep returned, and the boy was, after a time, allowed to go home with the wound partially closed. For two or three months he was able to run about, when the tubercular mischief in the kidney set up a lumbar abscess, which soon terminated fatally. The urinary organs affected with tuberculosis were shown.—Mr. REGINALD HARRISON strongly recommended cystotomy, not only for cases of chronic cystitis from other causes, which might be cured by it, but for the relief it afforded to the distressing symptoms which accompanied cases like the present. He had now performed the operation a great many times, and was much impressed with the good results it yielded.

A Splint for Compound Fractures, Disease of the Ankle-joint, and other Cases.—Mr. PAUL said that, having experienced great difficulty in the management of compound fractures of the leg with Listerian dressings, he now made use of a modification of a splint which he had introduced for the same object about ten years ago. The modification was taken from Howse's method of fixing the leg after excision of the knee-joint. In all bad compound fractures of the leg an anæsthetic should be given, the ends of the bones cut down upon, drilled and wired, and the wound properly drained. Then at a suitable distance above and below the wound the limb should be encircled with a strip of lint dipped in Howse's mixture of wax and carbolic oil. A plaster-of-Paris bandage should next be applied to the foot and leg, being interrupted at the injured part above and below by a strip of flat iron, covered where exposed by carbolised rubber tubing, outside which the antiseptic dressings could be applied (see figure). A limb so treated could

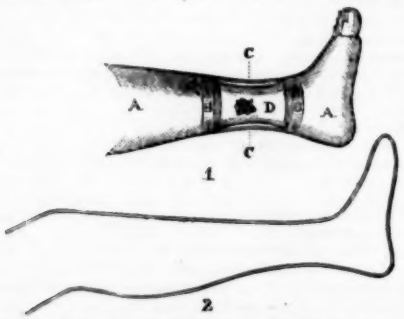

Fig. 1.—A. Plaster-of-Paris bandage. B. Carbolised wax and oil. C. Iron and rubber splint interruption. D. Fractured limb.

Fig. 2.—Flat iron splint covered with rubber tubing and bent to the outline of the limb for cases of ankle-joint disease, fracture, &c.

be freely moved and dressed without the ends of the bones being at all disturbed, and union was consequently more rapid. He wished, however, to call more particular attention to the original splint (see Fig. 2), which simply consisted of a strip of flat iron five-eighths of an inch in diameter covered with indiarubber tubing, and was most suitably applied to cases of disease of the ankle-joint with a discharging wound. It was necessary for the splint to fit very accurately, so that the contour of the limb should be taken with a strip of lead laid along the front and back of the leg and foot, especially moulding the heel carefully. The iron, covered with tubing, having been bent to fit exactly,[1] and a soft bandage applied to the leg and foot, leaving a wide interruption at the ankle, the splint should be laid in position and fixed with strapping across the dorsum of the foot, and again up the leg, leaving nothing but the splint itself in front of the ankle and at the back of the heel lying in the middle line of the leg. It was, perhaps, better to fix the leg to the upper bar of the splint first and then round both, since if pressure were felt anywhere it was at the heel, and this plan left room to introduce a strip of oiled lint below, where discharge might soak in between the splint and the skin. He did not know of any other form of splint by means of which the foot and leg could be well fixed in cases where there were discharging wounds near the ankle, and it was always to be regarded as an advantage when the surgeon could fashion the splint himself without any delay. The material, too, was very cheap, being sold by Mr. Critchley, of Upper Pitt-street, at about tenpence a foot. The latter method of applying the splint was sometimes better than the former for compound fractures, especially when very close to the ankle-joint, or when, from the nature of the injury, much swelling was to be anticipated. In such cases it was better to fix the splint with paraffin bandage instead of strapping.—Mr. RUSHTON PARKER was much pleased with the simplicity of the splint. For cases of fracture he preferred Mr. Thomas's splints, but for disease of the ankle with discharging wounds this appeared to be the best.—Mr. MITCHELL BANKS for the last five years had adopted Mr. Paul's splint for all his cases of disease of the ankle, and he considered it much the best appliance for such cases. The use of the splint was not limited to the leg, for he had found it very serviceable in some cases of resection of the elbow-joint.

Radical Cure of Hernia.—Dr. G. HAMILTON read a short paper upon this subject, based upon the experience of the surgeons at the Northern Hospital. He considered that the operation was justifiable in all otherwise healthy subjects under fifty years of age. The sac should be dissected clear, ligatured at the neck without dragging it down, and cut off. The pillars of the ring should be brought together; but there was great diversity of opinion as to which was the best material for this purpose. After experiments with different ligatures, he concluded that the sulphurous chromic gut was the best. Dr. Hamilton gave a synopsis of the fourteen cases in which the operation had been performed while he was at the hospital.—Dr. ALEXANDER said he had operated in thirty cases, and was so pleased with the result that he never hesitated to recommend it in all cases of either reducible or irreducible hernia. At first he only ligatured the sac and divided it, now he always closed the pillars of the ring with silver sutures. He thought that the ligature of the sac was an essential feature in the ordinary operation for strangulated hernia. It cut off the peritoneal cavity from the wound, and to this he attributed the fact that he had not lost a case since he adopted the practice.—Mr. PUZEY said that amongst other details to be borne in mind was the advisability of wearing a light truss for some time after the operation. He found too the cases which healed the most slowly were the most permanent, and so did not encourage primary union. In one of his cases Wood's operation had been performed, and it was interesting to note the gradual straightening out of the invaginated sac, which was in process of taking place at the time of the operation.—Mr. REGINALD HARRISON suggested that surgeons should attempt to procure in the inguinal canal a condition analogous to traumatic stricture of the urethra.—Mr. MITCHELL BANKS had performed fifty or sixty of these so-called radical cures; not that he thought we were justified in calling them radical cures, for a man who had once had hernia could hardly be said to be again as though this had never been present. The hernia was cured, and if a light truss were worn would never return, and that he considered was all that should be expected. He always dissected out the sac, ligatured its neck with catgut, cut it away, and sutured the pillars of the ring with silver wire. Those to whom the operation was specially useful were people who had adherent omentum in the sac, or with undescended testicle; conditions in which the truss was ineffectual. He had great confidence in the success of the operation.—Mr. RUSHTON PARKER did not regard removal of the sac as necessary, often it was not advisable, and he was content with dividing it below the ligature. None of his cases had worn a truss after the operation, and some had been up within a week. He did not think recurrence of the hernia was referable to absence of such precautions; it was involved in the same obscurity as the occurrence of ordinary acquired hernia. It was not unusual for a slight fulness and impulse to recur, but he found that this remained stationary. He had operated in twenty-eight cases. At first he did not suture the pillars of the ring, but latterly had found it best to do so. He did not think it wise to excite any irritation by means of the sutures employed, as he considered that the more quick and simple the union was, the firmer and better it would be; and it was a mistake to suppose that any subsequent irritation of the wound would render its union more compact.—Mr. RHINALLT PUGHE also spoke of the disadvantages of dragging down the sac when ligaturing it; it should be cut off and removed. He used the chromic catgut for ligaturing the sac and bringing together the pillars of the ring.

[1] It is easily bent over an iron rail, such as that round the children's cots in a hospital.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

Abscess of Mediastinum.—Lung Disease.—Bell's Paralysis.—Progressive Atrophy.

A MEETING of this Society was held on December 20th, 1883; Dr. H. F. Banham, President, in the chair.

Mr. B. WALKER related a case of Abscess of the Anterior Mediastinum following Pleurisy with Effusion; Recovery. R. W——, aged seventeen, was received in the Rotherham Hospital on Oct. 9th, 1882. Whilst at work he was struck on the chest by a red-hot bar of metal coming from the rolls. He complained of severe pain in the back and chest. His breathing was quick and shallow, auscultation sounds normal, resonance good over both lungs. There was a contused wound, round, three-quarters of an inch in diameter and half an inch deep, with charred edges at the junction of the sternum and the ensiform cartilage. There was another superficial burn (third degree), about eight inches square, over the front of the right chest, and several smaller ones. On the twelfth day a deep slough came away, and air could be heard entering and leaving through the wound with each expiration and inspiration; moist sounds could be heard all over both lungs.—Oct. 26th: Dulness over right base; extended the day following. Next month wound discharged freely. On March 9th, 1883, he left the hospital cured.

Mr. E. SKINNER showed a specimen of Malignant (?) Disease of Lung. The left lung was one solid mass and adherent to the chest walls; the right lung appeared healthy; the liver was enlarged. When the patient was first seen in the middle of March there was consolidation of the left apex. She subsequently became a patient at the infirmary. In July she suffered from hæmoptysis. On Nov. 1st the voice was very husky, the dulness had much increased, and she complained of great pain in the left shoulder; she was spitting blood. Subsequently the left arm became œdematous, and later on the other. The specimen was referred to the Pathological Committee to report upon.

Dr. BANHAM read the notes of a case of Bell's Paralysis, which was either of the rheumatic form or due to syphilitic neuritis, and which was followed after some months by contracture of the facial muscles, impaired movements of the soft palate, and distortion of the uvula. The author pointed out that neuritis of the facial nerve external to the Fallopian tube was less likely to produce a destructive compression of the nerve, and subsequent degeneration and contracture of muscle, than the same amount of inflammation taking place within the unyielding bony canal. There was evidence in this case that the inflammation had extended up to the geniculate ganglion. Dr. Banham also drew attention to the fact that the muscles were not spasmodically contracted, but had undergone atrophic contracture, and any efforts to extend them gave rise to acute pain.

Dr. BANHAM also gave particulars of a case of Progressive Unilateral Atrophy of the Face. The patient was a strong and otherwise healthy girl, of fifteen years of age. Her father and one of her sisters had suffered from neuralgia, but the family did not, with this exception, show any tendency to any disorders of the nervous system. Four years ago she had a bad gumboil connected with a carious bicuspid of the right side of the lower jaw. In a day or two, the face meanwhile being considerably swollen, the gumboil burst and freely discharged. The tooth was subsequently extracted. With the exception of the diseases of childhood she has always enjoyed perfect health. Shortly after the gumboil trouble she began to experience tenderness about the right side of the neck and face, and especially also about the ear. This condition has continued nearly to the present time. Two years ago the parents noticed some wasting of the face, which it occurred to them might in some way be connected with the old gumboil. There was also some little discolouration about the skin of the right side of the neck. At the present time there is marked wasting of the right side of the face. Below and in front of the ear is a considerable depression, apparently giving one the idea that the parotid gland and the upper part of the masseter muscle are greatly wasted. On the right side of the neck and over the sterno-mastoid muscle the skin is dry, and has apparently lost its subcutaneous fat. It can be readily raised from the subcutaneous tissue, and imparts to the fingers the feeling very much of thin flannel. It has a discoloured and dirty appearance; sensation, masticatory power, and bloodvessels are normal. The possible connexion of the gumboil with the present symptoms from an ascending neuritis was alluded to. Attention was drawn to the fact that in this case the wasting was probably entirely of fat and connective tissue.

Dr. DYSON then read a paper entitled "Some Difficulties connected with the Employment of Rest as a Therapeutic Agent in Medical Cases;" and in the discussion which followed Mr. Walker, Mr. Browning, Dr. Porter, Dr. Martin, Dr. Law, Dr. Dyson, Dr. Thomas, and the President took part.

Reviews and Notices of Books.

Selections from the Clinical Works of Dr. Duchenne (de Boulogne). Translated, edited, and condensed by G. V. POORE, M.D., F.R.C.P. London: The New Sydenham Society. 1883.

THE name of Duchenne is familiar to every student, and surprise may be felt that so little of his work has hitherto been rendered accessible to the English reader. The cause, however, is not far to seek. Duchenne was a discoverer rather than a teacher. His researches are valuable to the few workers in neurology rather than to its many students. To those especially interested in his work the language in which he wrote has been no barrier. Another obstacle to the task of translating was doubtless the character of his writings. His great clinical treatise, "L'Electrisation localisée," is a portentous volume of eleven hundred closely printed pages, and the cases narrated in it at length are nearly two hundred in number. The style is prolix in the extreme. Hence it is not surprising that an attempt made some years ago to translate the book into English should have proceeded no further than the introductory section on the subject of electricity generally. The English reader needs less a translation than an epitomé of Duchenne's great work, and this is exactly what Dr. Poore, with excellent judgment, has supplied in the New Sydenham Society's latest publication. He has taken "L'Electrisation localisée," translated much, omitted much, and condensed many diffuse passages and lengthy cases, and has added valuable notes embodying the results of subsequent and other investigations on the topics considered by Duchenne. The sections of the original work thus dealt with comprehend all its most valuable portions, and are those on locomotor ataxy, progressive muscular atrophy, infantile atrophic paralysis, acute atrophic paralysis in the adult, glosso-labial paralysis, pseudo-hypertrophic paralysis, injuries of nerves, lead palsy, facial paralysis, palsies of the hand and foot, hysterical paralysis, diphtheria paralysis, local palsies, spasms and contractures, and other less important topics. Duchenne's classical treatise on the "Physiology of Movements" Dr. Poore has left untouched: first, because most of the facts described in it are given, in a less systematic manner, in "L'Electrisation localisée"; and, secondly, because the importance of the book warrants the hope that it may be separately translated. Dr. Poore has performed his task in an admirable manner. His translation is clear and accurate, his method judicious, and his additions enhance considerably the practical value of the work.

A brief sketch of the life of Duchenne, an estimate of his work, and selections from obituary notices, are prefixed to the translation. In some respects the career of Duchenne was unique. He held no hospital appointment, he had to find his own field of observation, to win by slow degrees a welcome wherever there were phenomena which he could investigate and problems he could help to solve. No doubt this circumstance, at first perhaps a hindrance, ultimately contributed in no small degree to the success which he achieved. A hospital appointment means a vast amount of multifarious work and engaging responsibilities which would have frittered away much of the energy which Duchenne was

able to concentrate in its entirety to the one object he pursued. Ultimately almost every hospital in Paris furnished him with material for work, and his help was gladly received and duly recognised by every physician—by none more gladly than by Trousseau. Several of the lectures of Trousseau, which conveyed to their many readers the most novel knowledge, were founded on the researches of Duchenne, and the latter undoubtedly owed something of his position to the wide publicity his work thus received. But such a mode of work needs a large store of physical energy. Buoyant enthusiasm, more common among the French than with us, Duchenne possessed in a high degree, and it enabled him to continue his labours even when worn by the painful disease, a stone in the kidney, which filled his later years with suffering, and by the sorrow which darkened the close of his life. But his early work was his best. Upon it his fame chiefly rests. Much of it is of sterling worth, and will secure his name a place in the annals of physiology and medicine when most of his contemporaries have been long forgotten.

Practical Pathology; a Manual for Students and Practitioners. By G. SIMS WOODHEAD, M.D., F.R.C.P.E. Edinburgh: Young J. Pentland. 1883.

IT cannot often be said, in these days of literary activity, that a book meets a distinct want, that it opens up new ground, and that it is sure to be largely in request. All these things are perfectly true of the admirable and handsome volume before us. It is literally the first thorough attempt to deal fully with the subject of practical pathology, especially in its histological aspect, and in manner and scope of treatment it stands alone. The author holds the position of Demonstrator of Pathology at the Edinburgh University, and his book reflects in a striking way the method of study now being carried on there, where, aided by fully equipped laboratories, and inspired by the energetic example of the professor, pathology is being taught in as thorough a manner as possible. We may venture to predict that in Edinburgh we shall soon find a centre of pathological research equal to any of those centres which have done so much to place Germany at the head of medical science, and that Professor Greenfield will have the satisfaction of seeing himself surrounded by a band of earnest workers, to whom we may look for advances in knowledge of the greatest importance.

The volume opens with detailed instructions for the making of post-mortem examinations, containing many useful practical hints. The next chapter introduces the subject of pathological histology, by describing the apparatus required, and the methods employed in the preparation of specimens. It is easy to see that the writer speaks from his own experience, and his comments upon the relative value of different methods are, like his instructions, therefore all the more important. The succeeding chapters deal in turn with the morbid changes of most of the organs of the body, with tumours and with parasites. As an example of the style of the work we may glance through the chapter which treats of the liver. It opens with a short description of the normal anatomy of the organ, and then describes the conditions of cloudy swelling, fatty infiltration, fatty degeneration, and waxy degeneration; the plan in each section being first to describe the naked-eye characters, then to mention the best methods of histological preparation, for which in every case there is reference made to the previous chapter and section, which contains directions on the method; then the microscopical appearances are described, first as viewed under a low power, and then as seen under a high power. This systematic plan obtains throughout, and it is precisely the order followed by the pathologist in his inquiries. Whenever necessary, the text is aided by illustrations, and we may pause here to draw attention to the very striking and successful manner in which the work is illustrated. The vast majority of the figures interpolated in the text are coloured, and coloured so as to reproduce with tolerable exactitude the appearances of sections stained with various reagents. Thus, under waxy degeneration of the liver we find a drawing of a specimen coloured as by methylaniline violet, another to show the action of iodine, and a third giving the characters of an unstained specimen. For educational purposes nothing could be better conceived than the adoption of this novel but effective device. It forms indeed one of the most striking features of the book; and as the illustrations are all excellent as drawings, and are very abundantly supplied, it is unnecessary to state how much they will be appreciated. The next section in this chapter deals with chronic venous congestion, and this is followed by sections upon the various forms of cirrhosis—the "common," or "alcoholic," the "biliary" or "hypertrophic" (of which the author remarks that it is probably due to inflammatory changes set up around the branches of the bile-duct, either by some chemical irritation or by some obstacle to the outflow of bile), then syphilitic cirrhosis (congenital), and thence the text passes to the syphilitic gumma and syphilitic cicatrices on this organ. Acute yellow atrophy is next described. The account of tubercle is excellent, and is illustrated by a very striking picture of a section stained with picrocarmine. Lymphadenoma, leucocythæmia, the "typhoid liver," abscesses, cysts, angioma (with a brief mention of other tumours) are dealt with in turn, and conclude the chapter devoted to this organ. The author, whilst careful to discuss most of these conditions, wisely gives greater consideration to the mere common lesions. Diseases of the heart and of the bloodvessels follow, and then comes a chapter on the kidney, which embodies a very ample description of nephritis, in which the characteristics observed in scarlet fever are dealt with separately from the description of "acute parenchymatous" nephritis; and where attention is also directed to the condition of subacute interstitial nephritis—the outcome of acute Bright's disease, as distinct from the "granular" contracted kidney. The chapter on the lung is interesting, and one turns eagerly to the sections devoted to tubercle and phthisis. He describes as a caseous broncho-pneumonic tubercle the condition often met with in children associated with acute tuberculosis, and then treats separately of the lesions of acute phthisis and of common chronic phthisis. Chapters on the spleen, alimentary canal, bone, and the nervous system follow. That on the brain is incomplete, but we cannot help thinking the description and illustration of certain changes found in the medulla in a case of hystero-epilepsy to be somewhat foreign to the main purpose of the book. The chapter on tumours is excellent, and not overburdened with detail, whilst the concluding chapters on parasites, animal and vegetable, will be much appreciated.

We have formed a very high opinion of this book, and we candidly admit that there is in it little to which exception can possibly be taken. The style in places is rather rugged, but this is perhaps unavoidable in a work which conveys practical information; here style is secondary to clearness. But it is manifestly the product of one who has himself travelled over the whole field, and who is skilled not merely in the art of histology, but in the observation and interpretation of morbid changes. The work—which by the way is most handsomely produced in paper, type, and binding, as well as in the matter of illustration, to which we have above alluded—is sure to command a wide circulation. It should do much to encourage the pursuit of pathology, since such advantages in histological study have never before been offered. The author may feel assured that he has done good service to the cause

of pathological science, and by this work has shown that if he steadily pursues the line to which he is now devoted, he will rank one day among the leaders of this ever-advancing and most fertile subject.

Zur Anatomie der gesunden und kranken Linse. Von OTTO BECKER. Unter Mitwirkung von Dr. J. R. DA GAMA PINTO und Dr. H. SCHAFER. Mit Vierzehn Lithographirten Tafeln. Wiesbaden: Bergmann. 1883.

THIS important contribution to the literature of ophthalmic surgery is dedicated to the well-known ophthalmic surgeon, Ferdinand Arlt, as a compliment on the attainment of his seventieth year, and contains the results of twenty years' work. The making of good microscopical sections of the lens is a very difficult matter; for not only is the lens of the embryo subject difficult to obtain in a fresh state, but it is very slippery and difficult to imbed, and even when tolerably fixed its consistence varies so much that the outer parts are quite soft, whilst the nucleus is hard, and the parts glide over each other. The first difficulty was overcome by appealing to the gynæcologists who were occasionally able to forward the eyes of infants which for various reasons had perished during the act of delivery, and to the surgeons who now and then remove an eye otherwise healthy on account of the participation of the orbit in some forms of disease. The best preserving liquids were found to be alcohol of from 60 to 65 per cent. and a weak solution of chromic or of picric acid, and the best imbedding mass is one composed of egg albumen, tallow, and soda, or of the contents of an egg with a few drops of glycerine, or, finally, of a substance named celloidin; from one or other of these masses he was able to procure sections not exceeding $\frac{1}{2500}$ of an inch in thickness. In regard to the development of the lens, it may be mentioned that it is in the earliest period a vesicle with fluid contents, the wall of which is composed of several layers of epithelial cells, and this is found about the fourth week of intra-uterine life. In the second period of development the cells of the proximal wall of the lens vesicle grow in a sagittal direction, and those of the anterior wall arrange themselves in a certain order. In the third period the cell elements increase by division and the lens assumes its permanent form. The average weight of the lens is 0·219 of a gramme. The length of a fibre belonging to the outermost layer of the lens is 5·5 mm. in a newborn infant and 7·18 to 10·64 mm. in an adult. Becker describes in much detail the mode in which the lens fibres are applied to the capsule, and also the mode in which new fibres are formed. He shows that the layers of the lens increase by the application of new fibres from the equator.

The physiological degenerations of the lens fibres which take place throughout life are of a chemical, physical, and morphological nature; they become harder, yellowish, acquire a higher refractive power, and lose their nuclei. Chemical examination shows that there is a diminution of the albumin from the normal 94 or 95 per cent. to 82 or 84 per cent. On the other hand, the cholesterin and lecithin, which together are only present in the normal eye in the proportion of a little more than 1 per cent., become nearly 10 per cent. The salts do not undergo a remarkable increase. The cholesterin, it is probable, is not a foreign body deposited in the lens, but a product of the metabolism of the lens substance. In lenticular cataract the degenerative changes occur in the layers of the lens, intermediate to the clear nucleus and clear cortical layer, and they may present four forms — small concentric white striæ; thin white clouds; radiating striæ; and minute dots, without definite outline. The formation of cavities and lacunæ precede the appearance of senile cataracts, and Becker agrees with Priestley Smith in believing that lenses showing opacity are smaller than normal lenses. In capsular cataract there are evidences of cell-proliferation in the intra-capsular epithelium in the form of caryolytic figures, drawings of which he gives. The capsule itself, as H. Müller showed, remains clear. The substance which composes the thickenings sometimes closely resembles the capsule in transparency and refrangibility; in other instances it is yellowish and contains granular masses. Becker corroborates H. Müller's assertion that an epithelial layer of cells sometimes occurs on the anterior surface of the posterior capsule, and believes that they proceed from a proliferation of the cells lining the anterior capsule. The degenerative changes of these cells occasion the cataractous opacity.

OUR LIBRARY TABLE.

Archiv für Anatomie und Physiologie. (HIS, BRAUNE, and DU BOIS-REYMOND.) 1883. Heft IV., V., and VI.— This part contains the following memoirs—1. W. Henke: On the Topography of the Female Thorax, with a plate. 2. Hermann v. Meyer: On the Injection of Starch-paste. 3. Rabl-Rückhard: The Cerebrum of Osseous Fishes, and its appendages. 4. H. Strahl: On the Canalis Neurentericus and the Allantois in Lacerta Viridis, with a plate. 5. Paul Müller: The Area Cribrosa of the Human Kidney, and of some domestic animals. 6. A. Brenner: On the relation of the Inferior Laryngeal Nerve to some varieties of the Aorta in Man, and to the aortic system of air-breathing mammals generally. 7. Tschaussow: Results of Macroscopic and Microscopic Researches on the deep muscles of the anterior part of the Perineum in Man, and on the relations of the veins to them. 8. M. Gottschau: On the Structure and Embryonic Development of the Adrenals in Mammals, with two plates.

Archives für Anatomie und Physiologie. Physiologische Abtheilung, DU BOIS-REYMOND. Supplement Band 1883. In accordance with a pleasant and growing custom amongst the Germans, this part of the above periodical is composed of a series of memoirs sent in to the editor, Emil Du Bois-Reymond, by his former pupils, for publication, as congratulatory offerings on the occasion of his having completed the twenty-fifth year of his labours. The contributions are of considerable value, and have been forwarded by writers of great note. They are as follows: — 1. G. v. Liebig: Further Researches on the Pulse Curve. 2. A. Baginsky: On the Presence of Products of Putrefaction in the Liquor Amnii and in the Meconium. 3. Léon Fredericq: Experiments on Respiratory Innervation. 4. J. Gad: A Revision of the Theory of the Discharge of Tears and the Movements of the Lids. 5. J. Bernstein: On the Influence of Frequent Application of Stimuli on the Development of Muscle Force. 6. Th. Weyl: Physiological and Chemical Investigation on the Torpedo. 7. Lewinski: On the Physiology of the Rete Malpighii. 8. R. Heidenhain: On Pseudo-Motor Nerve Actions. 9. J. Steiner: On the Influence of Temperature on the Nerve Current, and the Rapidity of Propagation of Negative Variation. 10. H. Senator: On some Effects of Heat on the Circulation, Respiration, and the Secretion of Urine. 11. E. de Cyon: On the Effects of High Barometric Pressure on the Animal Organism. 12. J. Rosenthal: On a New Myographion, and a Report of some Experiments made with it. 13. S. Tschirjew: On the Theory of Electrotonus. 14. C. A. Ewald: On the Formation of Fat in portions of Intestine after Removal from the Body. 15. Aeby: The Astragalo-tarsal Joint in Man and Primates. 16. H. Kronecker and S. Meltzer: The Mechanism of Swallowing, its Excitation and its Inhibition. 17. H. Munk: Exercise and the Secretion of Milk.

Revue des Sciences Médicales en France et à l'Etranger. Dirigé par GEORGES HAYEM. Paris: G. Masson, 1883.— The value of this quarterly review of medical science is now

fairly well known and thoroughly established. It contains a large amount of condensed information. The number of journals from which it abstracts its matter is very large, and besides the more familiar journals in the four chief European languages it frequently contains *résumés* of important articles taken from the pages of, in some senses, obscure magazines. We do not remember to have seen in the ordinary foreign papers an account of Professor Kocher's work on the consequences of extirpation of the thyroid gland, which appeared first, we believe, in a Swiss medical journal. There is an excellent account of the matter in the last of these quarterly reviews. In addition to the ordinary index in each quarterly number a special and comprehensive register of names and table of matters is compiled at the completion of each volume of four numbers. This portion has just come to hand.

Elementary Text-book of Physics. By J. D. EVERETT, M.A., D.C.L., F.R.S., F.R.S.E., Professor of Natural Philosophy in the Queen's College, Belfast. Second Edition. London: Blackie and Son. 1883.—We are inclined to believe that it takes more profound knowledge to write a good elementary text-book than a large manual, for the latter may be compiled, whilst the former, if it is to be really valuable, must be composed. Professor Everett is no mere compiler, but a thorough master of his subject, and, accordingly, every page of his little book bears the mark of individual thought. He belongs, moreover, evidently to the class of born teachers, men who are capable of throwing themselves into the position of beginners, and so of feeling their difficulties and allowing for their time-limits. In this second edition the author has not only resisted the natural temptation to insert more matter, but he has simplified his book perceptibly. As it now stands, any intelligent school boy will read it with ease; and if he works steadily through its exercises will gain more than a smattering of sound elementary knowledge of physics. The book is singularly well adapted to the requirements of the primary examination of the Royal College of Physicians, and indicates, fairly enough, the extent to which the study of physics must be carried in the present condition of medical education.

Hints in Sickness; Where to Go, and What to Do. By HENRY C. BURDETT. London: Kegan Paul, Trench, and Co.—In this attractive-looking little book, Mr. Burdett has carefully compiled a list of all the institutions which deal either with poverty pure and simple, poverty allied with sickness, infirmity of mind or body, or general sickness, together with a popularly arranged synopsis of the remedies and appliances available for accidents and simple forms of disease, notably those of children, a list of poisons and their antidotes, the preparation of foods for invalids and the sick, nursing institutions, the more popular forms of proprietary foods, sick-room bedding and appliances, and generally all and everything relating to the management of the sick and chronically disabled. We have often desired to obtain, either for ourselves or friends, the very information this book supplies. We therefore can, with justice, commend this synopsis to the profession and to the public; indeed, we feel that no medical or general library can be complete without such a book of ready reference.

The History of the Year. A narrative of the chief events of interest from October 1st, 1882, to September 30th, 1883. Cassell and Company, London, Paris, and New York. 1883.—We are glad to welcome a second volume of this very useful history. The editor has introduced a few additions and alterations in the arrangement of the information which add to its value; but the second volume fully maintains the high standard of the first. The book only requires to be known to be highly appreciated.

In *Longman's Magazine* for January, in great part devoted to fiction, Mr. F. Anstey, in an article entitled "The Decay of the English Ghost," flings a little good-humoured banter at the Society for Psychical Research. There is also an interesting paper by Mr. Grant Allen on the "Ancestry of Birds," written from the evolutionist's point of view.

Good Words and the *Sunday Magazine* (Isbister and Co.) need no word of commendation from us. There is one feature, however, in both these serials which deserves especial praise, and that is the excellence of their illustrations. These are, indeed, for the most part, of singular beauty, and are alone worth the cost of the numbers. But the literary matter also is sound and good.

The *Leisure Hour*, *Sunday at Home*, *Boy's Own Paper*, and *Girl's Own Paper* (Religious Tract Society), are all deserving of the wide patronage they command. The first-mentioned publication for January contains, amongst other useful and readable articles, one by Mr. Cordy Jeaffreson on "Doctors out of Practice," written in the author's well-known easy and gossiping style. In it are recorded interesting facts in the history of the pioneers of English medicine and surgery with which many of the present generation of practitioners of the medical art are not familiar.

Analytical Records.

AROMATISED COD-LIVER OIL.

(J. LLOYD, BULLOCK, & CO., HANOVER-STREET, HANOVER-SQUARE.)

THE smell and taste of cod-liver oil are unfortunately impossible altogether to disguise. In the sample before us a very slight aromatic odour and taste have been imparted to the oil, and the result is decidedly more satisfactory than if a larger addition had been made. The aromatic flavouring seems to neutralise to a great extent that of the oil, and the result is one of the best preparations which has come before us.

MALDON CRYSTAL SALTS.

(E. LAZENBY & SON, WIGMORE-STREET, LONDON.)

This table salt, obtained from Maldon, in Essex, is sold in white and well-defined crystals. It appears to be almost perfectly pure chloride of sodium. The traces of sulphates and of magnesium salts in it are so minute that it is non-deliquescent and free from the bitter after-taste commonly noticed in the salt used for culinary purposes. We have no hesitation in recommending it for household use, for it is pure as well as attractive.

ITALIA PURO DE CINTO Y MATOGROSO.

(ADRIAN WARD, LOCUMBA, PERU.)

Some years ago we tested the celebrated Peruvian liqueur called "Pisco." We have now before us a peculiarly fine sample of this liqueur, which is known by the special name of "Italia." It is a fine, dry, and clean-tasting spirit, made from the muscatel grape, and it retains in great intensity the peculiar muscatel flavour and bouquet. Those who appreciate this flavour, will consider Italia a delicious liqueur, excellent with coffee, and an admirable conclusion to a good dinner.

CAFE VIERGE: THE HIGHLY CONCENTRATED ESSENCE OF PURE COFFEE.

(ALLEN & HANBURY, LOMBARD-STREET.)

Messrs. Allen and Hanbury have produced an excellent essence of coffee, pure and free from the crude taste observable in some samples. The severest test to which a coffee essence can be subjected is the preparation from it of *café noir*. This essence stands the test very well. We cannot say that the coffee so made is quite equal to the decoction prepared with due skill and care from fine and freshly roasted berries; but it is much bettter than most of

the coffee served in English houses, and is really very good intrinsically. The essence is so convenient, saves so much time, and avoids so much waste, that it is sure to be popular.

PINE EXTRACT.

(THOMAS CHRISTY & CO., FENCHURCH-STREET, E.C.)

We have received from the above firm samples of pine extract for use in every-day baths. It is prepared from the fresh needles of the pine, and is said to be of great value in the treatment of kidney disease, and for invalids and delicate children generally. For adults it has been used with success in rheumatism and various chronic joint affections. In most cases, a third of a tumblerful, mixed first with hot water and then added to the bath, will be found sufficient. The odour is by no means disagreeable.

ANTISEPTIC AND DISINFECTANT CIGARETTES.

(CORBYN, STACEY, AND CO., 300, HIGH HOLBORN.)

These cigarettes are made from the leaves (which contain the essential oil) of Eucalyptus globulus, either alone or medicated with a small quantity of carbolic acid, iodoform, or chloride of ammonium. They are recommended for various purposes, particularly for complaints of the throat, nose, ear, and lungs. The Eucalyptus by itself is by no means unpleasant to smoke, and the medicinal additions, although distinctly perceptible, alter its character so little that none of the cigarettes (except, perhaps, those containing carbolic acid) are disagreeable in taste. We think they are likely to be of considerable use.

New Inventions.

CORBYN'S ANTISEPTIC IRRIGATOR.

UNDER this name Messrs. Corbyn, Stacey, and Co., of 300, High Holborn, London, are selling a black rubber Higginson's syringe with a smaller ball than that supplied for enema apparatus, the outflow pipe being tipped with an ivory nut, into which can be screwed tubes of various lengths. These tubes are made of soft gum elastic, have an ovoid extremity, at the base of which are four apertures, through which a stream forced along the tube is directed backwards. This apparatus would be of service in applying deep urethral injections, and it has the great merit of being perfectly safe in the hands of patients themselves.

THE ADULTERATION ACT IN AMERICA.

IN the *Boston Journal* of Nov. 24th, 1883, a detailed account is given of the prosecution of Messrs. Rust Bros. and Bird, wholesale druggists, for selling adulterated drugs. The charge was brought at the instance of the State Board of Health, Lunacy, and Charity. Dr. Davenport stated that he had analysed a sample of tincture of opium purchased from the defendants, and found that it contained only ·81 per cent. of morphia. According to the Pharmacopœia, the strength of the tincture should be one in ten; and it was directed that the opium should contain not less than 120, not more than 16, per cent. of morphia. The sample examined was only two-thirds of the proper strength, yielding ·81 of alkaloid instead of a minimum of 1·2 per cent. The standard adopted was that fixed by the Pharmaceutical Convention of 1880. It was true the Pharmacopœia of 1870 required only ·90 of morphia; but even then the sample was deficient in strength. In cross-examination he admitted that opium varied much in the quantity of alkaloid it contained. Sometimes it was too strong; and he had known a case in which it had yielded 18 per cent. of morphia. But such instances were, of course, exceptional. The defendants pleaded that as the statute did not specify any particular Pharmacopœia, they might adopt any edition they pleased, even if they went back to the first one of 1820. The judge overruled this objection, and said that the Pharmacopœia of the United States was clearly the last one published. The law would not allow them to adopt any one of the six standards laid down from 1820 to 1880. They might take their choice of the 1870 or 1880 Pharmacopœias, but beyond that he could not allow them to go. It was then pleaded that neither the Pharmacopœia of 1870 nor that of 1880, in giving the formula for tincture of opium, stated what percentage of morphia it should contain. The proportion was given elsewhere and in another formula. The formula for the tincture merely said that so many parts of opium, alcohol, and water should be used, without reference to the strength of morphia in the opium. The defendants were not to blame, for they had purchased the best opium they could get, and had made the laudanum from it. Whatever it yielded must be right, and they were not responsible for the result. Furthermore, counsel drew a distinction between the words "should" and "shall." The formula for the preparation and manufacture of opium said it should contain so much morphia—*should*, not shall. The judge said there could be no doubt that the tincture was below the proper strength, whether they took the Pharmacopœia of 1870 or 1880. The defendants had not observed the law, although they probably thought they were complying with it. There was no wanton intention on their part to contravene the statute, but they had fallen into error through carelessness. As several legal points of importance had been raised, he would take time to consider the matter and judgment would be reserved.

In the *Boston Globe* of December 6th, 1883, an account is given of a similar charge brought against Messrs. Billings, Clapp, and Co., for selling tincture of opium which on analysis yielded only ·722 per cent. of morphia, instead of 1·20 per cent., as required by law. The evidence given was much the same as in the former case. The Court considered that the offence came under the statute against adulteration of drugs, and found the defendants guilty. Notice of appeal was given. It was understood that these prosecutions were the first of a series which it was proposed to institute under the Adulteration Act of 1882. This Act covers adulterations of drugs and articles of food, giving a definition of what is to be understood as adulteration in each case; it directs the Board of Health, Lunacy, and Charity to pursue such investigations as may be deemed necessary for the discovery, punishment, and prevention of adulterations, authorises it to spend three thousand dollars a year in such work, and provides a penalty not exceeding fifty dollars for the first, and not exceeding a hundred dollars for each subsequent, offence. Practically the rule adopted is that when an article is sold under a name given in the United States Pharmacopœia, and is found to differ from the standard of strength, quality, or purity laid down in that work—which is revised every ten years—it is held to be a case of adulteration. The aim so far has been to reach the manufacturers, for as their goods are sold far and wide honest work on their part is of vital importance. An agent of the Board would go to a manufacturer, ask for certain drugs, secure for legal purposes the admission of the manufacturer that he was the proprietor of the establishment, and then if adulteration were detected the case would be ready for prosecution. The attention of the agents, it is stated, will in the first place be directed to drugs which are in common use, and in the preparation of which adulteration is easy and profitable. Opium, quinine, and even such cheap articles as sulphur and Rochelle salt, are given as convenient examples. The value of work of this kind cannot be over-estimated. The decennial revision of the Pharmacopœia is also worthy of attention.

THE LANCET.

LONDON: SATURDAY, JANUARY 5, 1884.

WE cannot stand still—it is impossible; and if it were not so, it would be ignoble to go back. We must press forward. As men of science, as citizens, as *men*, the members of the medical profession, and the profession as a body, are bound to press forward. There can be no finality, not even a resting-place, in the pursuit of those benign and lofty aims with which the mission of health and the divine art of healing inspire us. There is *work* to be done in each and all of the departments of study and action of which we last week took a hasty survey. The *mot d'ordre* is "*En avant.*" He is a poltroon or laggard who hesitates to obey. Truth, the one but manifold, the indivisible but partite, has nothing to fear, but much to hope; humanity has nothing to lose, but much to gain, from the onward march of intelligence, and the extension of our field of inquiry in any and every direction. All roads lead to Rome. There is no true and honest path in the whole world of science which will not conduct the explorer to the safe and happy end of all, if he only have the courage and the industry to press on. Meanwhile one word of friendly warning to the wayward among us. Be it spoken in all brotherly love and loyalty. Ours is a night-march, and it is by the "touch on the right" we must keep together and enjoy immunity from that error which sooner or later entangles all who stray. The practitioner may be as special in his work as he please; but let him remember that the moment he sets up for being a "specialist" and thus cuts himself off from the great army of science, he is at the mercy of darkness and mystery, and cannot help but wander or stumble. It is in the unity of a common purpose, with mutual forbearance and respect, we must press forward; and while all that brings and binds us together is good and useful, that which isolates men and gives them personal aims and separate interests is bad and worse than useless, because it first enfeebles and then destroys. All the forces at work in nature and among men are in the ultimate effect constructive. It is inertia—which a hard-headed thinker once defined as the greatest and most malevolent force of all—that first disorganises, and then issues in death. Idleness or want of energy is at the root of the sectarianism and specialism in medical science and medical art. It is a pitiful pretext for short cuts and golden ways to a hollow success, that brains are not big enough and time is too short to be "good all round." For ourselves, and in fidelity to and reverence for the science and art we love, we must protest that the still growing passion for specialties fills us with anxiety and almost with dismay. We would fain, on the threshold of another year, fix the eye of hope on that distant, and yet not so very far, future when again, as in old times, the medicine-man will be neither an "ist" nor an "ologist," but a physician or surgeon—if, indeed, those arbitrary distinctions be preserved—a minister of the gospel of health, armed against every onslaught of the foe of life, and fully qualified and ready to attack disease under any of its protean forms. It is in this direction, we are convinced, the medical reformer ought to seek the ennoblement of his profession and the benefit of mankind.

We have said that there is work to do in every department. *Anatomy* is, unfortunately, one of the least understood and appreciated of the provinces of intellectual enterprise in which our profession is engaged. The student is too much much inclined to regard it as a piece of topography which he has to master, but which, being once learnt so that he can find his way about the organism and put his hand on anything he wants, may be treated as a branch of knowledge which he has mastered and needs only to retain. The practitioner, unless he be a surgeon, does not even feel himself bound to keep "his anatomy" in mind; and the "pure surgeon" is content if he believes he has made the anatomy of the so-called "surgical regions" permanently his own. How strangely shortsighted—ay, blind—is this light valuing of anatomy for its own sake. Not a day, scarcely an hour, passes in which the most ordinary practitioner does not stand in need of that information he has allowed to slip out of memory. Take the simplest acts the prescriber has to perform. He cannot *intelligently* select an aperient unless he has a precise knowledge of the structure and "nerve-supply" of that particular part of the alimentary canal, which may be either disproportionately irritable or abnormally inert. He cannot *intelligently* apportion a dose of medicine to quiet the turbulent activity of a palpitating heart or labouring lung, unless he knows whether the tumult be due to an irritated excitor or a paralysed depressor. Medical men may prescribe drugs on the lines laid down by scientists, but they cannot be scientists themselves unless they are anatomists first and physicians afterwards. There is, moreover, new work to be done in the province of anatomy. Look for a moment at the field opened up by the wholly original and eminently suggestive inquiries of Mr. GAY in connexion with the bearings of the coarse anatomy of the veins on the localisation of gout. The principle laid down in the few brief papers on this subject, which have from time to time appeared in our columns, we believe to be coequal in the range of its application with the boundaries of the organism as a whole. The localisation of disease is always a determination of anatomy, and no one of its local manifestations can be understood without a profound acquaintance with the anatomy, coarse and histological, of the part in which it appears. This is a phase of knowledge in respect to which we have only the faintest glimmering of light, and which it will well repay the anatomist to explore. Then, again, how much, or rather how little, do we know of the action of individual muscles as interpreted with the key of the evolutionary doctrine in the light of comparative anatomy and progressive development? and what that is worth even mentioning have we yet learnt of the action of muscles in groups? When and where are flexors stronger than extensors, or extensors than flexors? What, in obedience to the law of the parallelogram of forces, is the direction of the action of the component fasciculi of even the more prominent groups of muscles? Under what conditions of antagonism or obliquity of action are certain results produced? It must be evident on a moment's reflection how these questions bear directly

on the occurrence of dislocations, the displacement of bones, and how they must determine the *rational* and best modes of treatment. The marvel that practical "bone-setters," with a genius for "mechanics" in a rough-and-ready way, and with only a little common sense to guide them, every now and again succeed where scientific surgeons fail, is simply due to the fact that students and practitioners think too lightly of anatomy. We believe that anatomy is one of our richest fields, and yet one of the least explored; and it is a discredit and drawback to the practitioners of our art that they deem it permissible to "forget" what at every twist and turn in the discharge of their daily duty is most urgently needed. *Physiology* is the foundation of all "medicine," properly so-called. The fashion of the hour is to place pathology—which is in great part a mere study of consequences mistaken for causes—in the stead of physiology. Disease is disorder and disorganisation. The disorder comes first, then the disorganisation follows. The physician has to base his treatment on the line of departure from health, with the facts of pathology as landmarks and milestones, as it were, between the sick chamber and the dead-house. He who argues from morbid anatomy to disease reasons backwards, and though he may reason well and wisely, does amiss. The physician must be an anatomist first, a physiologist next, then a clinician, and last of all a pathologist; good in all, but discriminating, and a disciple of Nature as regards the order in which he studies his subjects and ranges his instruments for the cure of disease or health recovery. In physiology we can scarcely be said to have done more than dig out the few rough blocks at the mouth of the quarry. Even the physiology of the great organs is only partially understood. The study of *Pathology* is just now attracting more attention than almost any other branch of our science; and yet its initial problems are barely stated, much less solved. *Therapeutics*, despite the praiseworthy industry of many able experimenters, is scarcely a department. It is a promising feature of the recent work done in this province—albeit perplexing to the student—that classifications of drugs have generally failed. The best work of these later times seems to point to the conclusion that the whole materia medica will need to be investigated anew before anything approaching a reasonable system of therapeutics can be constructed on the basis of what of the properties of drugs is actually *known*. *Surgery*—rightly or wrongly—has long stood by itself. It has been too much of an art, too little of a science. This is a fault which the present holds out some promise that the future will mend. The allied departments of *Obstetrics* and *Gynæcology* have made excellent progress of late, and there is happily good prospect that they are preparing to take that high place in the science of medicine that their importance demands. It is a sign of the times full of encouragement that physicians of scientific attainment are devoting thought and pains to work which was too long regarded as unworthy of the attention of intellectual men. In *Ophthalmology*, the only specialty which has even the semblance of a claim to a right to stand alone, there is, we fear, some lack of enterprise, the recent formation of a new Society notwithstanding. This is the peril of all specialties. The men of "the eye" will do well to look to it that they are not outrun by the enterprise of physicians and surgeons who, approaching their subject from several points, have more than once, recently, threatened to prosecute the researches of general medicine and surgery farther into the region of the ophthalmologists than those "specialists" have themselves penetrated. The new year opens at a moment rich in opportunity with respect to every one of the great branches of medical science, and it is reassuring to know that there are labourers scattered over the entire province of inquiry eager to search and find.

The year 1884 should be notable for the accomplishment of the great work of Medical Reform. Our views on this subject are so well known to our readers that it is only necessary to say that we have nailed our colours to the mast and mean to be victorious all along the line. For the rest of the work that awaits us, and the difficulties we shall be sure to have to encounter, there is ample energy in our midst, if only it be properly elicited and wisely directed as occasion shall arise. The one all-important condition of usefulness and success is unity. We want to be drawn closer together, to feel that our labour and responsibility are common, and our interest one. We set exceeding value on the demonstration which has just been made, under the guiding hand of the President of the College of Physicians, on behalf of two of our brethren who have been persecuted and maligned. After the fashion of this sympathetic response to the individual manifestation of a common feeling we need to unite as one body. If we are one body, we shall have one mind, we shall think together, feel together, act together, and when this unification is realised, the medical profession will be recognised, as it has never yet been, as an organised integer in the nation, as a power in the State.

THE anti-vaccinationists must be jubilant at having secured a fresh accession to their ranks in the person of the Right Honourable JOHN BRIGHT. The ex-Chancellor of the Duchy of Lancaster, according to his custom, has spoken with no uncertain sound. Henceforth he will be looked to as the oracle of those who evince "a hatred of the law" as regards vaccination, and his word as the excuse and justification for the breaking of that law. We entirely disagree with the principles enunciated by Mr. BRIGHT, and take exception to his argument. His opinion of the efficacy of vaccination, if we may judge from a letter lately published, falls far short of belief. He says, "The facts appear to me to be in favour of vaccination;" but surely when this statement is considered with the context it seems like damning with faint praise. Mr. BRIGHT'S communication, nevertheless, is directed less against the practice of vaccination than against its enforcement by the repetition of penalties. This he characterises as "a monstrous violation of the freedom of our homes and of the rights of families." But does the ex-Minister recognise that freedom and rights are born of conformity to law, however antagonistic that law may seem to the thought, fancy, or even judgment of those who deem themselves aggrieved. It is all very well to fall back upon the old teaching of the "force of persuasion and example," but it is often difficult, nay sometimes impossible, to convince the uninitiated; and even then, as Lord LYTTON says, "in spite of the dogmas of sages our actions are not governed by our

convictions." In many cases it is only wasting time and energy to attempt to convert people to a doctrine founded upon acts which are mainly technical, and in the very nature of things unpleasant. To them it seems like certain evil for uncertain good. They recognise the immediate annoyance of vaccination, but they disregard the remote negative benefit conferred. If it can be shown beyond doubt that the procedure does ward off and protect from an infinitely greater ill—which it certainly does—then we unhesitatingly affirm that it ought to be carried out irrespective of individual bias or opposition.

In the analogous instance, the Contagious Diseases Protection Act, has lately been seen the price humanity has to pay for ignoring the safeguards of health. But what applies to this law tells with double force as regards the enactment on vaccination, concerning which the element of moral restraint and obligation is of infinitely less moment. We would commend our views to Mr. BRIGHT'S serious consideration, and ask him whether he is not unwittingly advocating the cause of an iconoclastic communism subversive of social order, and whether he would not act wisely in taking a lesson from the dogma on sanitation used by his late political opponent, Lord BEACONSFIELD, and in improving the occasion by putting that dogma into action.

It is not easy for any but medical men to estimate the value of vaccination, and the necessity for insisting upon its performance. When the unanimous voice of the profession is heard in one direction, and that too uninfluenced by mercenary motives, it behoves the public to place its health in the custody of those who alone are competent to judge of its necessities. We see nothing but disaster for the cause of vaccination in particular, and of prevention of disease in general, if the spirit of trades-unionism now rampant in a section of the community is fostered and supported by men of such influence as Mr. BRIGHT. Knowledge is power, but there is a power for evil as well as for good. Let us hope the "tribune of the people" will elect to stand by what we have pointed out as right.

THE value of so-called antipyretic treatment has seldom been doubted, and at the present day is universally admitted. Opinions may, and do differ, as to the most suitable methods to be employed for this end; and it is still open to inquiry how the agent employed exerts its power. Indeed, the whole subject of fever—which has received so much attention from the physiologist and the physician—is by no means fully exhausted. An important and careful contribution to the subject appears in the current number of VIRCHOW'S *Archiv*, by Dr. SASSETZKY of St. Petersburg. It consists in a study of the assimilative functions and of the intimate tissue-changes occurring in the febrile process, especially as shown by the elimination of nitrogen. The research was undertaken with the view of testing the effects of treatment directed to control the fever. The paper opens with a brief review of the history and progress of what is known as the cold bath treatment, an antipyretic method which the writer says is now adopted in all the principal clinics of Germany; and he has attempted to determine the relative value of this and other antipyretic agents—as quinine and salicylate of soda. He quotes the remarkable series of statistics that have been published by BRAND and his followers, which seem to carry conviction of the fact that the mortality of one fever at least—namely, typhoid—has been greatly reduced by hydro-therapeutics. Still, it is somewhat remarkable how few of those who have adopted this method, and who have recognised its value, should have undertaken an inquiry similar to that now detailed by SASSETZKY. He states that he has been able to find records of only three such inquiries. The first was by BARTH in 1866, who observed the effects of the action of baths in four cases of typhus and in two of typhoid, and concluded that the excretion of urea, phosphates, and chlorides in the urine was diminished by their use. SCHRÖDER, in 1870, investigated two cases of typhus treated on the same plan, and also found the urea to be diminished, without noting any marked change in the total quantity of urine. BAUER and KÜNSTLE, in 1879, instituted an inquiry into the comparative action of baths, quinine, and salicylate of soda, and noted that the flow of urine was increased under each method SASSETZKY expresses himself dissatisfied with these results, and points out discrepancies and mistakes in the conduct of the observations. He therefore conducted his research more systematically, and took care to analyse not only the urine but the fæces, in order to arrive at a just idea of the total elimination of nitrogen, and at the same time to estimate the quantity of the nitrogenous ingesta. In that way he hoped to determine how far assimilation is interfered with, and what proportion of the nitrogen eliminated could be attributed to tissue metabolism.

His research was conducted upon cases of typhus fever, relapsing fever, and pneumonia, in Professor MANASSEIN'S wards, the more common disease, typhoid, being excluded, on account of the disturbing element of the intestinal lesions. Complete observations were made in fifteen cases, the nitrogenous excreta being estimated daily in the urine and fæces; the phosphates and chlorides of the urine, and the amount of solids and nitrogenous substances ingested, were also determined. In each case the analyses were made during three definite periods, varying each from three to eight days—one period in which the antipyretic treatment was being conducted, a second when the fever was left uncontrolled, and a third after the febrile disturbance had passed away. In nine cases the antipyretic agent was the cold bath, given at a temperature of 18° R. (or 72·5° F.), for fifteen minutes, four times a day; in four it was quinine (in two doses of ten grains each, given in the evening); and in two it was salicylate of soda. The details of the method he pursued are given, but space will not permit their repetition here. Suffice it to say that he seems to have guarded himself against sources of error, which must necessarily be numerous in such an inquiry, when the total excretion of one stated period has to be compared with that of another.

The results of this laborious research may be sufficiently indicated by the conclusions given by the author. He found that invariably the cold bath diminished the elimination of nitrogen, and that a similar but far less marked diminution occurred in the cases treated by quinine and by salicylate. The quantity of urine was increased by each method, but to the largest extent by the bath. The assimilation of the solids and nitrogenous constituents of milk was improved under the bath treatment, as shown by the very marked

diminution in the fæcal elimination of nitrogen; and the same fact was also noticed, to a less degree, by the other methods. The quantity of water ingested was diminished, and the loss of water by the lungs and skin was also diminished, except under the salicylate, when the cutaneous loss was increased. These are the results which show that, during the febrile state, the patient is in a far better condition under the antipyretic treatment than without it. So far as assimilation of solids in the food goes, the author declares that it is so improved by this treatment as to approximate the lower degrees observed in health. The main reason for this difference in the febrile organism with and without exposure to controlling influences, lies no doubt in the actual reduction of the temperature of the blood—pyrexia implying increased tissue-metabolism, tissue-degeneration, increased oxidation, and so on. All the phenomena of fever are linked together in an inscrutable way, some of them as causes, others as consequences, of the essential fact—the heightened temperature. Seek what explanation we may, it cannot be denied that the reduction of the excessive body heat is of good effect; and, as SASSETZKY'S research clearly points out, this result is shown in diminished metabolism, in lessened elimination of nitrogen and carbonic acid, and, as the demand for oxygen is lessened, the respiratory action falls, the action of the heart is improved, and the liability to circulatory disturbance in consequence of cardiac failure is mitigated, whilst the abeyance of the effects of the febrile process on the secreting organs permit of a more natural performance of their functions and a more ready assimilation of nutriment.

THE recently published General Annual Return of the British Army for 1882, prepared by the Adjutant-General for the information of the Secretary of State for War, shows the average strength of non-commissioned officers and men to have been 181,282. The deaths during the year amounted to 2140, and the number discharged as invalids to 3545, being respectively in the proportion of 11·80 and 19·56 per 1000 of the strength. These results compare favourably with the preceding year, when the ratios were 14·18 and 20·49 per 1000. There were 45,385 men enlisted during the year, of whom 11,271 were rejected prior to, and 1216 after, attestation, making a total of 12,486, or 275 per 1000. We presume these were rejected on medical inspection, for in addition so many failed to join on other grounds that only 23,555, or 484 per 1000 of those enlisted, were added to the strength of the Army. Of those who joined 18 died and 85 were invalided during the year, being in the proportion of ·8 and 3·7 per 1000. We regret to find that there has been no decrease in the number of men fined for drunkenness, which amounted to 244 per 1000 of the strength; there has, however, been a reduction in the numbers tried by courts-martial for drunkenness, and also for "absence without leave," and "making away with necessaries,"—offences of which it is usually the chief cause. A table showing the educational acquirements of the men serving affords gratifying evidence of the steady progressive advance in the Army in this respect. On Jan. 1st, 1873, the proportion of men unable to read and write was 60 per 1000, and "of superior education" 326, while on Jan. 1st, 1883, the proportion was 30 and 756 respectively. This is certainly a very remarkable increase in the well-educated class of soldiers, if the same scale has been applied to the classification on the two occasions.

Much has been said in the military papers about the deterioration of the physique of our Army as a consequence of the adoption of the system of short service; and it has been asserted that we have now a mere boy army, and even that very weedy. We have looked in vain in the Adjutant-General's return for any evidence of the truth of this assertion. On the contrary, the tables show the very reverse. On comparing the ages of the men serving in the Army on Jan. 1st, 1873, with those on Jan. 1st, 1883, it appears that there were under twenty years 155 and 89 per 1000, between twenty and thirty-five there were 716 and 836, and above thirty-five there were 129 and 75 per 1000; so that there has been a marked decrease in the proportion of soldiers at those periods of life when they are deemed unsuitable for active service from youth, or from advancing years coupled with the effects of service in all climates. As regards height, the proportion of men under 5 ft. 6 in. was 212 in 1873, and 199 in 1883; between 5 ft. 6 in. and 5 ft. 10 it was 674 and 688; and of 5 ft. 10 in. and upwards 114 and 112, results which certainly show no falling off in this particular. Again, on comparing the chest measurements, which may be deemed a fair evidence of physical development, it appears that on Jan. 1st, 1875, the first year for which we have been able to obtain the data, the proportion of men having a less girth than 34 in. was 81, from 34 in. to 38 in. 706, and above 38 in. 213; while on January 1st, 1883, the proportion at the same measurements was 46, 707, and 247 per 1000. From these data it would appear that so far from the physique of the Army having fallen off during the last ten years, under the system of enlistment for short service, it has improved, so far, at least, as can be inferred from the three important particulars of age, height, and chest measurement.

DURING the past session of Parliament two Acts were passed which affect the duties of sanitary authorities. The first was the Factory and Workshop Act, 1883, which will be better known as the Retail Bakehouses Act. This Act transfers to the sanitary authority of every urban and rural sanitary district the duties formerly possessed by Her Majesty's Inspectors of Factories as regards the sanitary regulation of bakehouses, especially as to their cleanliness, ventilation, freedom from overcrowding, and general sanitary state. The new Act also contains clauses not possessed under the Factory and Workshop Act, 1878. These will materially facilitate the taking of proceedings in the case of bakehouses which are unfit for occupation on sanitary grounds; and, by requiring the adoption of remedial measures instead of merely imposing a fine, they will tend towards securing the improvement which experience has found to be so necessary in bakeries. It is also enacted, in the case of any bakehouse let or occupied since June 1st last, that no form of watercloset or privy shall communicate directly with a bakehouse, that the cistern used in connexion with the bakery shall be distinct from the closet cistern, and that no drain or pipe for carrying off sewage or fæcal matter shall have any opening within the bakehouse. And with a view to give effect to these provisions the medical officer

of health acquires all the powers heretofore possessed by the factory inspector as regards bakeries, these powers apparently requiring that he shall take and institute proceedings in the same way as an inspector under the Act of 1878. How far medical officers of health will like to be placed in the same position as the factory inspectors in this respect remains to be seen.

The other Act is the Public Health Act, 1875 (Sewers), Amendment Act, 1883, which aims at getting rid of the difficulties under which sanitary authorities have laboured when desiring to carry sewers through a district where the underlying minerals belonged to companies and other persons. Hitherto they have been so placed that before being able to execute such works they could be required to pay to the owners of the minerals compensation for all sorts of prospective and future damages. The pith of the Act is that sanitary authorities now acquire the same position in connexion with sewers as are possessed by water companies and others as regards water-mains under the Water Works Clauses Act, 1847.

Annotations.

"Ne quid nimis."

ENGLISH MORTALITY IN 1883.

THE Registrar General's return for the last week of 1883 not only completes the record of the year's mortality statistics for the twenty-eight large English towns dealt with in that return, but supplies the means for estimating with near approach to accuracy the mortality that prevailed last year in the whole of England and Wales. The rate of mortality during the fifty-two weeks of last year averaged only 21·6 per 1000, and was 0·7 below the rate in the same towns in the previous year. Thus the death-rate in the twenty-eight large English towns did not average more than 22·0 per 1000 during the years 1882 and 1883, which must be considered a low rate for our largest towns, bearing in mind that this was the mean death-rate for the whole of England and Wales during the thirty-five years ending 1875. If we except a slight increase of mortality due to an exceptionally cold and ungenial spring, the death-rate in our largest towns was constantly lower throughout 1883 than in the previous year. The most marked decline occurred in the three months ending December last, when the mean death-rate was only 21·2, against 23·0 in the corresponding period of 1882. The rate of mortality in the whole of England and Wales bears an almost constant relation to that prevailing in the twenty-eight largest towns. It may be estimated, on the basis of this all but constant relation, that the death-rate in England and Wales during the last quarter of 1883 did not exceed 18·9 per 1000. Knowing as we do that the death-rate was equal to 22·3, 20·1, and 16·8 per 1000 respectively in the first three quarters of last year, we are thus in a position to estimate that the English death-rate in 1883 was so low as 19·5 per 1000. In 1881 and 1882 the rate was 18·9 and 19·6; thus the English death-rate during the past three years has averaged only 19·3 per 1000, and shows a decline of 2·7 per 1000 from the mean rate that prevailed during the thirty-five years ending 1875, since which the Public Health Acts of 1872 and 1875 have fully come into operation. In the five years 1876–80 the death-rate declined to 20·8, and in the first three years of the current decade or intercensal period, the rate has further declined to 19·3. This decline of 2·7 per 1000 in the mean death-rate of the past three years signifies that nearly 214,000 persons (more than 71,000 per annum) are now alive in England and Wales who would have died had the mean death-rate of the thirty-five years, 1840–75, been maintained. Fully believing as we do that the decline in the death-rate is a sure indication of a corresponding decline in the disease-rate, we see every reason to regard the new era of sanitary progress inaugurated by the Public Health Acts of 1872 and 1875 with thankfulness as well as hopefulness.

THE LATE DR. CARR AND THE MEDICAL BENEVOLENT COLLEGE.

IT is a happy circumstance if, when a good man dies, his unrealised benevolence is completed by his widow. There have been fewer happier illustrations of this than in the case of the late Dr. William Carr, of Lee, Kent, who was medical adviser to the Duke of Connaught when the Prince was a cadet at the Royal Military Academy, Woolwich Common. Dr. Carr was very anxious to found four free medical scholarships in the Royal Medical Benevolent College at Epsom, for the benefit of orphans of medical men. He contributed to this end largely himself, and obtained subscriptions from others; but unfortunately he was overtaken by death in 1877, leaving his most benevolent scheme uncompleted. Some ladies would have accepted such an event as an excuse for ceasing further endeavour. But, with a higher sense of duty, Mrs. Carr determined that her husband's scheme should be carried out; and so effectual was her determination that she has collected a fund that, instead of giving £50 to each scholar, as Dr. Carr intended, she will be able to give £60, and will yet have enough left to give each scholar, on completing his studies, £60. It is only fair to the Duke of Connaught to say that he liberally assisted Mrs. Carr, and heartily congratulated her on her success. We beg to add our congratulations, and to express a hope that grief and affection may oftener take such practical forms. We take the more pleasure in recording these facts, inasmuch as the late Dr. Carr was a much-respected member of the staff of this journal.

THE ORGANIC PHOSPHORUS IN URINE.

GLYCERIN-PHOSPHORIC ACID has been found in the urine in leukæmia and in certain cases of chyluria, and there is now reason to believe that in extremely minute quantities it is a normal constituent of urine. Sotnischewsky has shown that if the phosphoric acid in urine be estimated in the ordinary way, after the urine has been boiled for some time with strong nitric acid, the amount of phosphoric acid indicated is more than that of the same urine which has not been so treated, the inference being that the boiling with nitric acid oxidises the phosphorus in combination with organic matter in the urine. Zuelzer confirms Sotnischewsky, and, in addition, has made a series of observations on healthy animals under varied conditions of diet &c., and also in various diseases in man. He finds that the amount of what for convenience we designate organic phosphorus is extremely small in healthy individuals on ordinary diet, but that it is considerably increased by feeding with brain-substance and fatty matters. The morbid conditions in which the most marked increase occurred was in a case of dementia, and in several instances after the administration of chloroform. In a case of diabetes the amount found was also considerable. These observations are of interest as being likely to elucidate several obscure points with regard to the tissue metamorphosis that occurs in nervous diseases. Hitherto the evidence obtained by an estimation of the phosphates in these diseases has been disappointing, and of a negative character. But if, as is very likely, the phosphates present in urine only represent the normal tissue metabolism of the

body generally, and the glycerin-phosphoric acid that of the phosphorised constituents of the nervous system, then it is not a matter for surprise that our labours in the past have been so unsatisfactory, since we have not recognised the possibility of phosphorus being found in the urine in this form. In future investigations it will be necessary to determine both separately, and to clearly express their relationship. When this has been done in a series of cases, there can be little doubt that we shall be able to discriminate between the increase of phosphoric acid due to general tissue metabolism and that caused by disturbances of nutrition in the nervous system, and thus elucidate the mysterious *rôle* played by phosphorus in the organism generally.

TYPHOID FEVER AT PENZANCE.

DURING the past month Penzance has been visited with a severe epidemic of typhoid fever. From thirty to forty persons have been attacked, of whom two have died, one after an illness of only four or five days. The outbreak, which is now evidently on the decline, has been very clearly traced to milk-infection, and in its general character has presented no very peculiar features. The history of its origin and spread, however, is so very instructive, and conveys such a striking lesson to our local sanitary authorities, that we must refer to it in detail. Within an area of three miles from Penzance there are four different sanitary authorities; the Penzance Corporation employing a medical officer of health to supervise the borough and harbour; the Penzance Rural Sanitary Authority, with another medical officer responsible for a rural district practically conterminous with the Penzance Union, except that two of the largest parishes, Madron and Ludgvan, in close proximity to the borough, have chosen to hold aloof from the rest of the district; these have constituted their own local boards into sanitary authorities, and appointed their medical officers of health, at the munificent salaries of £6 and £5 per annum respectively. The mode in which such an arrangement might be expected to work is well shown by the history of the present epidemic. In a small village near Penzance there have been several cases of typhoid fever during the past two or three months. This village is in the paris of Madron, and thus under the sanitary control of its local board. The newspaper reports do not mention that any precautions were taken to prevent its spread, or that the other sanitary authorities in the neighbourhood were even made aware of its existence. From this village the clothes of a servant-girl, ill with typhoid fever, were sent to a farmhouse in an adjoining parish (and consequently under a different sanitary authority) in order to be washed. A case of typhoid then occurred at the farm. The farm is a dairy-farm, and the whole of the milk is sold to a purveyor in the borough of Penzance, which is under the control of a third authority, whose attention was first drawn to the incident through the daughter of the milk-purveyor being attacked. Before the distribution of the milk could be stopped, however, the mischief had been done, and a large number of persons who had been supplied with milk by this purveyor were successively attacked. The confusion and neglect of proper precautionary measures, arising from a division of authority which should all have been in the hands of one body, could not be more clearly exemplified. The Corporation of Penzance has asked the Local Government Board to institute an inquiry, and to suggest preventive measures. The facts, however, are clear enough and well known, and it does not seem that any special difficulty exists in the prevention of a similar occurrence. A consolidation of authority, a single medical officer of health for the whole district, a medical supervision and inspection of the dairy-farms and the premises in which milk is stored previous to sale, to ensure every cleanliness, the purity of the water-supply, a proper disposal of the sewage and flushing arrangements, with an occasional analysis to guard against adulteration and the addition of water, are precautions sufficiently obvious without recourse to any higher authority for advice. As this is the second time within a few years that Penzance has suffered from typhoid fever due to milk contamination, we should suppose that the inhabitants will scarcely submit to a continuance of the present system and a constant fear of similar outbreaks.

PROFESSOR OWEN.

THE announcement that Professor Richard Owen is to be made a K.C.B. will not only be very welcome to all who are privileged by his friendship, but to that much larger circle who are intimate with the eminent scientific attainments of this *savant*, and who rejoice at any mark of Royal favour bestowed as a reward of patient industry and single-hearted devotion to science. It would be vain to attempt to speak of all Professor Owen's claims to distinction and to gratitude; but in his labours as Curator of the Hunterian Museum of the Royal College of Surgeons he rendered services to the medical profession of the utmost value; nor will it be forgotten that upon him devolved the duty and the privilege of unveiling the statue of Harvey erected at Folkestone, and that on this occasion he delivered an address which is an important contribution to the discussion of the value and justification of the practice of vivisection. In his retirement from his active duties, Professor Owen carries with him the hearty good wishes of all biologists, and as hearty congratulations that his work has met with appropriate recognition from his Sovereign.

THE LIVING AND THE DEAD.

THAT a proposal to erect industrial dwellings for the housing of four hundred persons on a disused cemetery within the metropolis should be even possible, is of itself sufficient to condemn the sanitary legislation to which London is subject; but when the details of the scheme are made known, disgust is the feeling which must prevail in every mind. The burial-ground in question is at Peel-grove, in the Bethnal-green district; and a trench made in it disclosed, within about four feet of the surface, a mass of coffins laid shoulder to shoulder and head to feet, piled closely one on top of the other, about eight bodies having been placed in each grave. According to Dr. Bate, the interstices between the closely packed coffins are filled in with a material which once was apparently gravel, but which is now a dull-coloured, tenacious, clay-like soil, mixed with organic matter to saturation. The disturbance of such a mass is referred to by the workmen as resulting in an awful stench. The idea of providing dwellings for the living on such an aggregation of the dead is truly horrible, and at first sight it seems incredible that it can ever be carried into effect. But the most painful part of the whole story lies in the apparent helplessness of the sanitary authority and of the Board of Works. The former seems unable to interfere until either nuisance or injury to health can be shown to exist; and the only power the latter possesses is to prevent the erection of houses on made ground unless all animal matter and refuse be previously removed. But the intending builder purposes to cover the site with a bed of concrete, and to erect his buildings on that, and not on the soil direct, and in this way he also evidently seeks to evade the power of the Home Secretary to interfere in the case of any disturbance of human remains. Besides which, there is a precedent. A similar cemetery at Globe Fields was built over about fourteen years ago, some of the ground being removed so as to admit of the erection of piers and arches upon which the

main walls were constructed. And not only so, but it is pointed out that no definite illness has been shown to exist amongst those who reside over this colony of the dead. Whether this be the case or not, we have no hesitation in condemning the scheme from a sanitary point of view alone. Such a group of residences cannot be wholesome, and to prove this, it ought by no means to be necessary to indicate the production of any special form of disease. Many conditions which slowly, but none the less seriously, affect health, fail to produce a definite disease, and there ought to be some means of taking action in advance with a view to prevent the occurrence of similar mischief in this case.

CHRIST'S HOSPITAL.

LAST week we alluded to some rumours which had reached us in regard to the sanitary condition of the Hertford branch of Christ's Hospital. Since then we have received two letters on the subject, both of them confirmatory of the statements made by us. One of them is from the father of one of the boys, in which very grave allegations are made. He asserts that when his son was at death's door with scarlet fever the parents were never even told until he was better, when they were informed that it was rose-rash. The boy was sent to a farm, where he was allowed to go in the night to a watercloset in the garden. He contracted whooping-cough at this farm, and was permitted to go home with it, and so gave it to all his brothers and sisters. About a month ago our informant received a circular, telling him that a "severe epidemic of sore-throat" had broken out, and that the doctors thought it better to reduce the number at the school. The boy returned home with severe diarrhœa, and said that a great many boys in his ward had diarrhœa, that the infirmary was full, and that one of the wards had been turned into an infirmary. It is further asserted that the boys obtain the water they drink from a pump, which they have to work. Our contemporary, the *Hertfordshire Mercury*, after quoting our article, comments upon it, asserting that the school is in a satisfactory condition, and blaming us for publishing reports injurious to it. The writer, however, admits that one boy has died of diphtheria, that several boys were in the infirmary suffering from "colds," and that all the boys were sent away. Brick drains have, it is said, been lately replaced by glazed pipes, and all the drains have been examined. It is, therefore, evident that things have been wrong, and we can only hope that a thorough sanitary reform will be instituted. Some suspicion must in such a case attach to the water, and the account given by our correspondent of the well increases it. Well-water, especially unfiltered well-water, as we presume this is, is a frequent cause of zymotic disease.

SLOP DIET.

IT is strange to observe how tenacious of life are many of the very crudest notions in regard to diet. It is not confined to the laity alone to confound practically—though, of course, not in theory—the mere ingestion of digestible food with its proper assimilation by the system. So, too, with many the idea of slop diet only extends so far as the limitation of food to that in a liquid state. The true characteristics of slop diet are negative as well as positive, for they are—easy digestibility and absorbability, blandness, and the absence of bulky indigestible residue apt to undergo fermentation in the colon and certain to form hard, solid, and perhaps large fæces. This latter condition is not unfrequently lost sight of, and milk, frequently in large quantities, is ordered for patients for whom "slop diet" is considered necessary. Sir William Jenner drew attention to this at Birmingham in his address on the Treatment of Typhoid Fever, and he pointed out that milk was very rich in albuminous principles, and when once acted upon by the gastric juice really represented not only nutritively, but actually, a considerable quantity of solid food. The fatty parts of milk, which form so large a constituent of this fluid, are usually but imperfectly digested and absorbed, and these with the undigested casein pass on into the colon and form hard and dry scybalous masses, which with a pure milk diet are usually troublesome to evacuate. While milk, then, is an article of food of immense value in health, and especially in those habituated to it, it is doubtful whether it be not overvalued in disease. Especially is this the case in all ulcerations of the intestine, in all "laming" of the intestine, as from inflammation or congestion, and in all those states in which it is desirable that defecation should be performed with the minimum of strain and local irritation. After reduction of strangulated hernia, for example, when the muscular power of the congested bowel is impaired, a diet consisting largely of milk is undesirable, as entailing a risk of lodgment of masses of undigested and unabsorbed milk clot in the implicated gut. After operations for hæmorrhoids, anal ulcer and fissure, anal fistula, and especially after operations for ruptured perineum involving the anal sphincter, and for recto-vaginal or recto-urethral fistulæ, where it is important that the lower bowel should not be emptied for some days, and that then the motion should be soft and small, it is most important to give only such food as leaves but little undigested residue, and therefore to withhold milk altogether or to give it very sparingly. Dr. Collins Warren of Boston regards this precaution as of great moment in the treatment of ruptured perineum. Of all slop diets water is the best, then come saline and saccharine solutions, and then solutions of albumen and decoctions of starch. And in ordering them their condition out of the body or in the stomach is not alone to be considered, but the changes they undergo during their transit along the whole alimentary canal should be taken into account.

ALLEGED DEATH FROM ERYSIPELAS AFTER VACCINATION

AN inquest has recently been held at Sheffield on the body of a child aged six months, whose death was alleged to have resulted from vaccination. This child, with some forty others, had been vaccinated on November 13th at the public vaccination station at the Temperance Hall, Sheffield. On November 20th the child was brought for inspection; the vaccinated arm had the usual appearance, and bore no sign of erysipelas. Subsequently erysipelas set in, and as a result the child died. The vaccinator was not able to state how many other children he had vaccinated with the same lymph, or indeed whether he had vaccinated any; but the interval of time which elapsed between the operation and the onset of erysipelas conclusively proves that the latter affection was not introduced at the time of the operation. In the absence of any knowledge of the interval between the subsequent inspection of the child and the appearance of erysipelas, we have no evidence before us to show whether this disease may have been contracted on the child's second visit to the station or subsequently in its home. In connexion with this point, however, it is worthy of notice that one of the children vaccinated at the same station a week before the deceased is stated to have died from erysipelas and pneumonia. Another statement appears to reflect seriously on the condition of the ventilation of the vaccination station. The fitness of a room for the purposes of vaccination deserves the serious attention of boards of guardians. But a short time ago we had to comment on another room used for this purpose, and which appeared from the description of it given at an inquest to be open to serious objection, and boards of guardians incur a grave responsibility in permitting an ill-ventilated and overcrowded apartment to be used as a vaccination station.

CROTON OIL.

THE investigations of Mr. Harold Senier, Fellow of the Chemical Society, into the active principles of croton oil are not without considerable interest to the physician. Mr. Senier read to the Pharmaceutical Society on Dec. 5th a paper in two parts—one on the vesicating principle in croton oil, the other on the purgative principle in croton oil. In 1878, in a former paper, he gave the results of an investigation into the action of alcohol on croton oil, and showed that under certain conditions it separated the oil into two parts—the one part vesicating, the other non-vesicating. The non-vesicating oil Mr. Senier has since shown to be purgative. The conditions referred to are that the alcohol shall be of specific gravity ·794 to ·800, and in the proportion of seven volumes to six, or any larger proportion. If the alcohol and oil are mixed in equal volumes perfect solution takes place, and this holds of a mixture with any less quantity of alcohol. But when the volume of alcohol exceeds that of croton oil, a part of the croton oil separates. This part varies in quantity in different samples of the oil. The part so separated is afterwards insoluble in any proportion of alcohol. But that portion of oil dissolved by alcohol is, when separated, soluble in all proportions. Mr. Senier has found that the part soluble in alcohol as above used was, or contained, the vesicating principle, and that the vesicating activity does not exist in the free acids, nor in any basic constituent, but resides in the combined non-volatile fatty acids. Mr. Senier further finds that the purgative constituent does not reside in the alcohol-soluble vesicating oil, but entirely in the alcohol non-soluble, non-vesicating oil. In support of this conclusion he refers in his paper to experiments on himself and others. He further says that the conclusion is borne out by a study of the therapeutic action of this non-vesicating oil by Dr. J. W. Meek. The general result of these experiments is that in this non-vesicating oil, in doses from one-tenth to one-half a minim, administered in the form of pills, with magnesium carbonate and extract of henbane for excipients, we have a safe and mild or powerful purgative, according to the dose, unaccompanied by any unpleasant symptoms. No purgative action was obtained by administering the vesicating oil in a similar way, but a considerable amount of irritation in the alimentary canal, accompanied with nausea. The medical importance of Mr. Senier's investigations is obvious, and justifies the hope that we shall be able to extract a more practicable and effective purgative from croton oil, minus the violent and irritating powers which the physician is apt to associate with the drug in its entire form.

EDUCATION OF PAUPER CHILDREN.

THE education of our pauper children is undoubtedly one of the most important questions of the time. In England and Wales alone, above 60,000 children are chargeable to the unions, and upon the proper training of these it depends whether they be raised in the social scale and become self-supporting members of society, or remain more or less permanently a burden on the community. It has been well observed that the workhouse school is the door by which children troop in, and the nursery in which hereditary pauperism is trained. The failure of the old system, which kept the children in contact with the workhouse, has been recognised, and an attempt has been made by some of the larger unions to bring the children up apart from its surroundings. For this purpose two systems have been adopted—one in which the children are boarded out and taught at the public elementary schools, the other by settling them in large institutions especially constructed for the purpose. Considerable difference of opinion exists as to which is the best plan. The objection to the boarding-out system is that it requires an immense amount of supervision if it is to be worked free of abuses; and certainly, as matters at present stand, we do not consider the supervision provided a sufficient guarantee against the possibility of such abuses arising. On the other hand, the large schools or institutions are objected to on the score that the children brought up in them become mere machines, and do not acquire habits of self-reliance and readiness. For our part we admit the force of both objections. With regard to the boarding-out system, we think that except in the case of small unions, and even then only when ample guarantee is given for adequate supervision, it should not be permitted as a recognised system, but only to meet exceptional cases where a union is too small or too poor to have a school of its own. The objection to large establishments can be met only by improving the system of education there adopted. There can be no doubt that the children can be better housed, better fed and looked after, than if distributed in the houses of persons themselves perhaps not far removed from pauperism, and this is a distinct advantage. But the system of education carried out in these institutions is essentially grim and monotonous, and it is not a matter for surprise that children brought up under its influence fail to acquire habits of self-reliance and are deficient in intelligence. It would not, however, be difficult to introduce improvements in this direction, and to brighten the life as well as the intellects of the inmates of these asylums. Plenty of wholesome outdoor exercise, games which encourage individual competition, and, above all, kindly and sympathetic supervision, are chiefly required; whilst the purely educational work might be conducted under the genial Kindergarten system, instead of the mechanical and rigid one at present in vogue.

THE DALRYMPLE HOME FOR INEBRIATES.

IT is satisfactory to learn that in spite of the weak state of the law in reference to habitual drunkards, the Dalrymple Home, "The Cedars," Rickmansworth, is likely to prove useful. From a late report, we learn that there were eleven inmates in the Home, of whom four were admitted under the Habitual Drunkards Act. Two of these were there for twelve months, and two for three months each. Further, we learn that there has been no trouble with any patient; that not one has drunk any intoxicant; and that all are greatly improved. Such accounts are very intelligible when one reads of the regulated life and the pleasant surroundings of the Home. The establishment is under the immediate guidance of Mr. Joseph Smith, late one of the honorary staff of the Guildford County Hospital, and Medical Officer of Health to the Guildford Rural Sanitary Authority. Practitioners having dipsomaniac patients cannot do them a greater kindness than to urge them to use this Home, either quite voluntarily or under the feeble provisions of the Habitual Drunkards Act.

SUCCESSFUL "PUFFING."

WE quite agree with our contemporary the *Spectator* that "the example of a successful tradesman regretting his too successful puffs of his own wares would have been a better example for Englishmen than the example of genuine and splendid generosity which Mr. Holloway undoubtedly set." The deceased millionaire was never allowed to advertise in the columns of THE LANCET. It was judged wrong, in a moral as well as in a commercial sense, to facilitate the monstrously exaggerated statements by which the "pills" and "ointment" of this successful advertiser were puffed into notoriety. We do not the less feel that we acted rightly because the publicity denied was gained elsewhere. All excessive puffing is a wrong done to the community, let the puffer reap what fruits he may.

THE LOCAL GOVERNMENT BOARD AND DR. ROGERS.

THE Local Government Board has not confirmed the suspension of Dr. Rogers, but it cannot be congratulated on the way in which it has refused to do so. We have been favoured with a copy of the letter of the assistant secretary of the Board in answer to one of Dr. Rogers on the circumstances under which he was suspended by guardians who, alike in those whom they suspend and whom they support, do not enjoy the confidence of the public. The Local Government Board discusses these charges against Dr. Rogers: (1) That in certain cases he did not put bed-cards up; (2) that in the summer he abruptly stopped the supply of an allowance of milk at eleven in the forenoon; (3) that he caused the removal of cases to the Central London District Sick Asylums without duly consulting the Relief Committee or the guardians; (4) that he was addicted to the practice of writing in the Report book against names of slight cases, "To be dealt with by the Board"; (5) that he examined paupers on their admission in his own room, or in other than the receiving wards; and (6) that he neglected to attend meetings of the Board. We will not discuss these detailed points. They bear, on the face of them, an aspect of littleness, and they are disposed of in detail by Dr. Rogers in his reply in a pamphlet on his suspension, which, by the way, admits of being arranged and written with a little more clearness. We regret to say that the Local Government Board thinks it fair and fit, in connexion with the question of his suspension by guardians whose administration has been thoroughly discredited by the public, to remind Dr. Rogers, in a minatory way, of the fact that the guardians of the Strand Union required his resignation. This is really too bad. Dr. Rogers' offence, then, was in giving evidence which had much to do with the beneficent legislation of 1866. Though it procured for him the displeasure of his guardians, it obtained for him the respect of the public, of the whole press, and of his own profession, and must ever remain his chief satisfaction. For the Local Government Board, after all that has happened, and the endorsement of Dr. Rogers' evidence by legislation, to refer to it with a threat, is to our thinking an egregious error of public duty. It would have been only natural had Dr. Rogers resigned in indignation at such a letter. But perhaps he acted more magnanimously, and with more respect to the cause of the sick poor, in controlling any strong inclination to pursue that course.

JUDICIAL HANGING IN INDIA.

MR. SHIRLEY DEAKIN, F.R.C.S., Superintendent of the district gaol, Allahabad, sends us notes of fourteen cases of judicial hanging. From his report, which is drawn up with great care, we gather that the last behest of the law is carried out in strict conformity with the regulations that the culprit "shall hang by his neck till he be dead," for in not a single instance were the vertebræ fractured or dislocated, nor was the spinal cord injured. The length of drop allowed is about six feet, and this Mr. Deakin thinks amply sufficient. In the first execution that he witnessed the noose of the rope was placed in the middle line in front, and the struggling of the criminal was violent and painful to witness. In the subsequent cases he had the knot placed at the side of the neck, with the object of compressing the vagus nerve and so inhibiting the cardiac and respiratory functions. The result, he tells us, was quite satisfactory. As a rule, the epiglottis is torn or the hyoid bone or laryngeal cartilages fractured; once the trachea was completely ruptured. The inner coat of the carotid artery was abraded in two cases. It is customary in India to use a silken rope, which costs about £7, and to grease it each time it is called into requisition. The gallows, as Mr. Deakin found it, was of primitive construction, consisting of four upright posts, ten feet high, with a platform resting upon the top. This was reached by a ladder, which the doomed man had to climb. The drop was effected by pulling away the two front posts. Mr. Deakin modified the apparatus by placing a trap door in the centre of the platform, so that when the bolt is withdrawn the door swings down on its hinges and hides the victim from view. Mr. Deakin relates a case in which the long drop was employed; the structures of the neck gave way and the head was torn from the body, a casualty not unknown to home experience. Our correspondent deprecates the practice of judicial hanging, believing it fails to act as a deterrent from crime; at any rate, in the coloured races, who meet their fate with calm indifference.

A COLONIAL DOCTOR CHARGED WITH MANSLAUGHTER.

WE have received copies of the *Mainland Guardian* for Nov. 21st and 24th of last year, containing the report of a trial of a charge of manslaughter brought against Dr. Masters. The defendant was accused of having caused the death of a woman through criminal neglect of his duty whilst attending her during her confinement. The patient succumbed to puerperal fever, which it was alleged was the consequence of a portion of placenta being left in the uterus. A further count in the indictment was to the effect that a lacerated wound had been made by an unskilful use of the forceps. On the latter point the evidence was conflicting, one doctor stating that in his opinion the rent was made post mortem. The autopsy revealed a small portion of adherent afterbirth, the decomposition of which, aided no doubt by unhealthy surroundings, had probably led to the fatal event. The presiding judge, who quoted the law as laid down by Lord Ellenborough, summed up strongly for an acquittal. The jury returned a verdict of "Not guilty." To this verdict we entirely subscribe. A painful incident in the case consisted of one of the medical witnesses for the prosecution admitting that he was influenced by vindictive motives, and that he felt justified in his action. Of course, Mr. Justice McCreight stigmatised this conduct as indefensible.

SCHOOL PUNISHMENTS.

THERE would seem to be need for a definition of the limits of "punishment" in schools. If masters take to tying tongues and beating boys when stretched over the sharp corners of desks, there will be a juvenile revolt before long, and the sympathy of the public will be with the rebels. It is a very unfortunate fact, but indisputable, that not one man or woman in a score has the patience requisite for the discipline of the young. These *irregular* punishments are the outcome of irritated, because weak and worried, brains. Rules must be made by some authority (the Council of Education perhaps) applicable to all schools, private as well as public.

SCARLET FEVER AND EDUCATION.

IN referring to a prevalence of scarlet fever at Leeds, Dr. Goldie points out that a month now never passes without this disease causing some fatality, and he is of opinion that this result is due to the present system of compulsory education, which, to an extent heretofore unknown, leads to the congregation in large numbers of those who by reason of age are specially liable to receive the poison; and he goes on to say that, with a view to meet this modern danger, schools for the young should, "like our hospitals for the infectious sick," be small and judiciously separated. There is much force in this advice, but we fear that the anticipation of an

increase in the education rate is likely to prevent its being adopted to such an extent as to meet the object intended. In the meantime, however, it would be well that our infectious hospitals should, both at Leeds and elsewhere, be so distributed, both in point of size and locality, as to remove some of the difficulties attendant on securing early isolation of the sick, and that the facilities now offered to authorities to obtain the earliest possible notification of infectious disease should be put to use.

THE BOWER AND KEATES FUND.

THERE has not been for many years a more hearty or deeper professional movement than that originated by the "persecution" of Messrs. Bower and Keates. It has united as one man all classes in the profession; and it has brought together, if not the corporations and the profession, at least those who essentially represent the corporations of England and the profession. We are not without hope that the corporations of the other portions of the United Kingdom will take this case and its lessons into their serious consideration, and enforce the representations to be made by the Royal Colleges of England to the Government. Messrs. Bower and Keates may feel themselves quite relieved, by the sympathy and practical support of their brethren and of their neighbours, from further care, pecuniary or otherwise. The sum already received is more than sufficient to meet their estimated expenses. But the deep injury done to the profession, as personified in them, remains and calls for complete exposition. As we go to press a meeting of the committee is being held at the house of Sir William Jenner to determine unsettled questions in regard to the subscriptions so liberally contributed by the profession from all parts. Amongst other business transacted will doubtless be the addition to the committee of the name of Mr. Marshall, who, both in his official and personal capacity, has taken a deep interest in this movement.

CASES OF CHARBON IN GUY'S HOSPITAL.

TWO cases of charbon were admitted into Guy's Hospital during Christmas week from the neighbourhood of Bermondsey, and both were traceable to the handling of skins. One was admitted on Dec. 24th, under the care of Mr. Davies-Colley, the patient having been engaged at Fenning's wharf in unloading wool which had been discharged from a ship of the Orient line. The other case was admitted on December 27th, under the care of Mr. Clement Lucas. This patient, as late as Dec. 24th, had been employed in housing Cape hides at Flacks, Chandler, and Co.'s. In both cases the site of inoculation was upon the cheek, and both were treated by excision and the cautery. The bacillus in the latter case has been found in the urine, saliva, and other secretions. It is satisfactory to learn that the patients are progressing favourably, and that the grave nature of the disease is now early recognised by the men employed in the skin trade. It appears that the foreman of the warehouse on learning that one of the men had a pimple on his face and was complaining of a stiff neck advised him to seek advice at the hospital without delay.

THE EPIDEMIOLOGICAL SOCIETY.

AT the next meeting of the Epidemiological Society a paper will be read on "The Origin of the Cholera Epidemic of 1883 in Egypt," by Surgeon-General Hunter, M.D., the British Cholera Commissioner. The meeting will be held at 8 P.M. on Wednesday next, the 9th instant, at the Rooms of the Medical Society, 11, Chandos-street, Cavendish-square, at which place the meetings of the Epidemiological Society will for the future be held.

VENTILATING GRIDS IN PUBLIC STREET SEWERS.

SOME years ago it was resolved by the Liverpool Health Committee to ventilate the sewers in all the public streets gradually by means of gratings placed in the middle of the streets at regular and short distances. The cost is stated to have been from £15,000 to £16,000 a year. The practice has been much discussed, has been recently before the Health Committee, and has formed the subject of a correspondence in the *Liverpool Daily Post*. As sanitary science and years advance, it may be hoped that a time will come when no building (public or private) will be without its own ventilating shaft or shafts in connexion with the main sewer. But unfortunately such a consummation, however delightful to contemplate, must be a work of time, and meanwhile it is incumbent on sanitary authorities to do all in their power to minimise the evils of sewer gas. This has been done in Liverpool by means of the ventilating grids, and from the facts before us it would appear that the work has been efficiently done; certainly no expense has been spared. The grids are not placed in courts, and it is a significant fact that the city has for some years enjoyed a great immunity from typhoid fever.

THE HOSPITAL SATURDAY FUND.

A MEETING of the delegates of this Fund was held on Saturday evening last, at the Central Office, 41, Fleet-street; Mr. C. Pizey presided. The delegates adopted the annual report of the Council, from which it appeared that £1000 more was distributed by the Fund than in 1882. The Council claim to represent a constituency of between 200,000 and 300,000. But this estimate is rather vague, and there is a want of some means for bringing home directly to the *employés* their responsibility for a much larger collection than has yet been realised. Fourteen more institutions shared in the distribution than in the previous year. Over twenty medical charities had agreed to receive nominees of the Fund as life governors. But the number of these is not yet agreed upon. The Council should not insist on more than one such governor at a time. It will best increase its influence over hospital administration by augmenting the collection. Until this is doubled at least it has neither vindicated its own existence nor established any claim to much representation on the governing boards of hospitals.

SUCCESSFUL PROSECUTION UNDER THE APOTHECARIES' ACT.

MR. JOHN MITCHELL RHODES, of Henshaw, near Yeadon, was lately prosecuted by the Apothecaries' Society for practising as an apothecary without holding the licence of the Society. The judge gave a verdict for the full penalty of £20, with costs on the higher scale, and advised Mr. Rhodes to get qualified. In reply to this advice, his solicitor said the public by making demands on his time would not let him become qualified. The solicitor did not offer any explanation of the fact that Mr. Rhodes' name appears in the Medical Directory with the title of L.S.A.

TRICHINOSIS.

EMERSLEBEN, a village in Saxony, has been the scene of an epidemic of trichinosis. The number of deaths has been considerable. Simultaneously, the Minister of the United States has addressed a reclamatory letter to the French Government on account of the prohibition of American pork from France. According to M. Brouardel, the epidemic in Emersleben had nothing to do with American produce; and elsewhere Prof. Virchow has declared that he has never known a case of trichinosis caused by American pork

EXPENSES OF LORD MAYOR'S DAY.

THE *City Press* gives the following statement of the receipts and expenditure for the banquet and show of the Lord Mayor:—"The total cost is £3843 13*s.* 6*d.* This includes: Dinner, £1730; decorations, £453 8*s.* 1*d.*; military bands, £375 17*s.* 8*d.*; trophies, &c., £278 11*s.* 4*d.*; other procession charges, £240 13*s.* 4*d.*; music in Guildhall, £43 13*s.*; printing and stationery, £293 6*s.* 4*d.*; general expenses, including decorations for committee, gratuities, &c., £428 0*s.* 3*d.*" This sum is paid by the Lord Mayor and the Sheriffs, his Lordship paying half and the two Sheriffs the other half between them. The sum may seem large to the uninitiated; but if we are rightly informed, the Lord Mayor and the Sheriffs may be congratulated on having done the business rather economically. Undoubtedly, however, considering the amount of misery and starvation at the East-end, the expenditure will seem to the public a waste of money which will not bear criticism.

PATHOLOGICAL SOCIETY.

AT the meeting this evening (Friday), in addition to the business already announced, an address will be delivered by the President, Mr. J. W. Hulke, F.R.S.

MR. WESTON.

IN spite of a sore heel, aggravated by walking on asphalte at the rinks of Kidderminster and Birmingham last week, Mr. Weston has persevered in his arduous undertaking. The road has now been greatly improved by being covered with some rough roof felting. He has now walked 1800 miles since he started.

THE Manchester and Salford Sanitary Association have prepared a memorial for presentation to the Corporation of Manchester, in which they submit that the present plan of affording facilities for analyses at small fees, through the agency of the inspectors under the Sale of Food and Drugs Act only, is calculated to benefit the community to a very limited degree as compared with a system of allowing citizens to employ the analyst direct at small fees to certify as to the purity or otherwise of articles of food or of domestic use suspected of adulteration. They are of opinion that the city should possess a laboratory of its own, and that the whole time of the analyst, or at least that of one of his qualified assistants, should be occupied thereat.

CONVOCATION of the University of London meets on Tuesday next, the 8th instant. The business includes resolutions respecting: (1) The leaving open the examinations in the Art, Theory, and History of Teaching to other than graduates of the University; (2) the general adoption of the principle that a pass in a single subject at a Pass Examination should excuse from further examinations of an equal or inferior difficulty in that subject; (3) the admission of candidates to the proposed local examinations without restriction as to age; and (4) the introduction of modern English History into the Matriculation and Intermediate Examination in Arts.

THE abolition of chaplaincies at the Paris hospitals has excited the indignation of the Archbishop of the city, who advises the faithful not to send the sick to the hospitals, but to organise a system whereby they may be treated at home.

MR. C. KENNARD, M.P., will take charge of a Bill to be introduced in the next session of Parliament, to rescind the existing privileges enjoyed by grocers of retailing spirits.

OWING to an increase in his public duties Dr. Fussell has been obliged to resign his appointment as Physician to the Sussex County Hospital, having been on the medical staff over thirteen years. Dr. Fussell has held several appointments in Brighton: Guardian to the Brighton Union, Treasurer to the Lying-in Hospital, Physician to the Brighton and Hove Dispensary, and one of the Committee of the Brighton Provident and Benefit Society, now merged in the Charity Organisation Society. Dr. Rutter, the present Assistant Physician, is a candidate for the vacant post.

PROFESSOR REICHERT, whose tenure of office as professor of anatomy at the Berlin University dates back to the year 1859, died on the 21st ult., the day after his seventy-second birthday. For some time past he has not been equal to the duties of his office, and at the commencement of the present session Professor Waldeyer was appointed conjoint professor. Reichert's researches in anatomy, embryology, and comparative anatomy give him a high place among the scientists of a generation now passing away.

A PROPOSITION to grant a superannuation allowance of £325 to Dr. Liddle, on his resignation of the post of medical officer of health for Whitechapel, has been unanimously carried by the Board of Works of the district. The adoption of the resolution was accompanied by many well-deserved expressions of esteem and appreciation of Dr. Liddle's past services.

THE next quarterly meetings of the Medico-Psychological Association will be held at Bethlem Hospital, on Feb. 5th and May 6th. The Association Prize Dissertations for the present year must be sent to the President on or before June 30th. The conditions of award appear in the current number of the "Journal of Mental Science."

THE distribution of prizes to the pupils, *internes* and *externes*, in medicine and surgery of the hospitals and infirmaries of Paris took place on Dec. 27th in the amphitheatre of the Administration Générale de l'Assistance Publique.

AN interesting series of papers is now appearing in the *Lyon Médical* on the parentage of rheumatism and malaria. One main contention of the author, Dr. Bertholon, is that these diseases are only different expressions of the same pathological state.

M. HYADES, of the Marine Medical Service, has been nominated Chevalier de la Légion d'Honneur.

THE prize for French naval medicine for the year 1883 has been awarded to M. Maurel.

SMALL-POX is stated to be making great ravages in Basutoland.

DR. EICHORST, of Gottingen, has accepted an invitation to fill the chair vacated by Professor Hugenin at Zurich.

MR. LOWELL has expressed his intention of retiring from the Lord Rectorship of St. Andrews University.

AN inquest was held on the 28th ult. at the Bristol General Hospital on the body of a man who had been bitten by a woman in a fit, and subsequently died of blood-poisoning.

Pharmacology and Therapeutics.

MALT JELLY (PATENTED).

WE have received from Messrs. Allen and Hanburys specimens of their malt jelly, an ounce of which is said to contain "more nutritious matter than half a pint of the best ale or stout." It may be obtained flavoured with either raspberry, malaga, or vanilla, and for a medicine is by no means unpalatable. Children take it without difficulty, but adults soon tire of its sweet insipid taste. The preparation, we see, has been "patented." There are already so many patent medicines that it is to be regretted that a useful article should have been added to the list.

YERBA SANTA.

This plant is endowed with much the same properties as Eugenia cheken.[1] Amongst the Indians it enjoys the reputation of curing consumption. But American physicians have failed to verify this belief. Nevertheless, it does seem to possess a certain power in relieving the dyspnœa of asthma when employed in the form of fumigation. When given internally as a fluid extract, in doses of fifteen drops and upwards, it seems to give relief from the shortness of breath of chronic bronchitis, pneumonia, and tubercular disease. The drug is also credited with tonic, sedative, and astringent properties, as well as a local action on the mucous membranes like that ascribed to the balsams. On these lines the fluid extract has been given in chronic disease of the kidneys. The general health seems to be improved also.

BOLDO.

This name comes from Chili, and is given to an indigenous plant. The leaves serve to make two preparations—viz., a tincture and a fluid extract. These fluids are prescribed in America for cases of adynamia and to strengthen the action of a feeble heart. An essential oil is contained in the leaves, which seems to exert a modifying influence on inflamed mucous membranes. This property has been utilised in the treatment of inflammations of the genito-urinary tract. Recent observations made by M. Verne seem to show that the quantity of urea discharged by the kidneys is increased without any change in the amount of urine excreted. Aromatic principles have been detected in the urine. The body heat and circulation are unaffected by these preparations.

PHOSPHATE OF CODEIA.

M. Hegar of Fribourg has had the phosphate of codeia prepared. This salt seems to be soluble in four times its weight of water. In virtue of its great solubility it may be employed with readiness as a hypodermic injection, being more useful in this respect than the sulphate or hydrochlorate. The new salt crystallises in small white columns, having four sides; it has a bitter taste, and contains about 70 per cent. of the alkaloid codeia. This alkaloid, as is known, possesses soothing and analgesic powers, like morphia, but it does not exercise such a marked soporific action as morphia. No local mischief is excited by the subcutaneous injection of the solution of phosphate of codeia.

CEREUS.

Two plants of the genus cactus (Cereus grandiflora and C. Bomplandii) have been in use, in the form of fluid extracts, as cardiac remedies. The drugs appear to be indicated in cases of functional disturbance of the heart where irregularity and palpitation are prominent signs. It is possible also that the medicaments may be of service in organic disease, being adjuvant to digitalis and bromide of potassium.

CHLORATE OF POTASH.

M. Mering of Strasburg has recently published the results of some fresh researches on the action of chlorate of potash. He has found that the salt goes through the organism in great part without undergoing any change. Methæmoglobin is said to be formed when blood and chlorate of potash are mixed, and at the same time a part of the chlorate is reduced. The addition of an alkaline base retards the decomposition of blood, whilst the addition of carbonic acid accelerates the change. Chlorate of potash decomposes venous blood much more rapidly than arterial. The deleterious action of chlorate of potash is manifested principally when this salt is absorbed by the stomach in a fasting state, and when the elimination does not go on at a sufficiently rapid rate.

SALICYL-RESORCIN-KETONE.

Salicyl-resorcin-ketone is a compound which is formed when salicylic acid and resorcin are heated together to 195° to 200° C., and, as might have been expected, it shares to some extent the antiseptic and antipyretic properties of the bodies from which it is prepared. According to Herr Repond (*Zeitsch. der Allgem. öst. Apoth. Ver.* xxi., 502), in small quantities it is less powerful as an antiseptic than either salicylic acid or carbolic acid; its action being to limit the development of, rather than to kill, the septic germs. It is, however, non-poisonous, repeated doses of two grains having been administered without inconvenience; it has been found useful for surgical dressings, and has been given to the extent of three or four grammes daily in typhoid fever without producing any unpleasant symptoms. Salicyl-resorcin-ketone is soluble in 1000 parts of water at 40° C., soluble with difficulty in hot water, and easily soluble in glycerine and alcohol. It melts at 133° to 134° C., gives when in solution a red-brown colour with perchloride of iron, smells faintly aromatic, and has a not disagreeable taste. The corresponding compound with phenol, salicyl-phenol-ketone, is still less active as an antiseptic and more insoluble, but is said to be non-poisonous even in ten-grain doses.

EL BÉTHINA.

A species of henbane is described in the *Journal de Pharmacie* ([5] viii., 415) under the Arabic name "El Béthina," which is believed to be the plant employed by the Touaregs to get rid of the members of the Flatters Mission. This kind of henbane is met with frequently a few days' journey to the south of El Golea in the Sahara region. It grows in isolated tufts, and attains a height of 50 to 60 centimetres, flowering in March and fruiting in June. The plant is used by the Sahara Arabs for criminal purposes; it is known to be poisonous to the camel and horse, but it is said to be eaten with impunity by the gazelle and sheep. The natives use the herb in the form of pulp or powder, which is mixed with dates or milk. The antidote used is pepper and butter, mixed with water that has been triturated with dates. This produces profuse perspiration, and the patient recovers without having experienced hallucinations.

[1] Vide THE LANCET, vol. i., 1882, p. 396.

HAGAR'S WELL AT MECCA.

ANALYSIS OF THE WATER.

A SHORT time ago I received from the Editor of THE LANCET a small hermetically sealed tin canister, forwarded by Dr. W. G. Balfour, containing water from Hagar's, or the Zemzem, Well, in the Prophet's Mosque, at Mecca. The letter which accompanied the sample was dated September 3rd, so that more than six weeks, and probably a considerably longer period of time, must have passed between the collection and the analysis of the sample. As the water contained in the canister measured only 112 cubic centimetres, it was diluted to one litre with perfectly pure water, and the results subsequently obtained by analysis were calculated for the undiluted water. Of course no great exactness can be claimed for the figures, which, however, are sufficient to show the extreme foulness of the well. The absence of the so-called albuminoid ammonia is a striking feature in the analysis. It is probably due to the completion of the putrefactive process. The total solids, free ammonia, oxidised nitrogen, and chlorine, are enormously high, as are the nitrites (estimated by the method of Griess). No reduction of the sulphates could be detected, but it may fairly be supposed that the nitrates originally present must have suffered some diminution, their agency in destroying sewage matter having been clearly shown by Dr. Angus Smith. Dr. Balfour's history of the well and its surroundings fully accounts for the fearful

character of the water. For the sake of comparison I append a typical analysis of the water supplied to London by the Thames Companies:—

	Grains per gallon.	
	Mecca.	London.
Total solid matter	464·4	18·0
Chlorine	75·5	1·5
Nitrogen as nitrates	13·75	·18
Nitrogen as nitrites	·09	None
Ammonia	·358	·001
Albuminoid ammonia ...	None	·004

C. W. HEATON.

TRADITIONAL HISTORY OF THE WELL.

When Hagar and the infant Ishmael were abandoned by Abraham for domestic reasons which every family man must approve, they wandered into the valley of Mecca, or rather where Mecca was afterwards founded, and Hagar, oppressed by the heat, began to search for water to relieve the thirst from which she and the child were suffering. She ran backwards and forwards between the hills of Safa and Marwa, seeking in vain; but, returning to the spot where she had left the infant, found that Ishmael had himself discovered the spring they both needed by a simple expedient, familiar to babies of all nations and periods. Kicking out against the ground, his infantile efforts had laid bare one of those springs which in Arabia are frequently concealed by a light layer of sand. This spring which saved the life of the ancestor of the Arabs is the well Zemzem, so called (by obvious onomatopœia) from the murmuring sound of its waters. Such at least is the Arab tradition of the origin of the well that now forms one of the most sacred objects within the precincts of the Kaaba, or Holy Temple of Mecca. The Kaaba itself—a cubical building covered outside with hangings of rich black damask, and famous for the sacred stone in one of its corners, which is said (and not improbably, as it seems to be an aerolite) to have fallen from heaven, and which has therefore been kissed black by centuries of adoring pilgrims,—was, according to the same authority, built by Abraham after the pattern of a temple which Adam had seen in Paradise, and of which he had transmitted the design to his descendants. Without professing absolute faith in this interesting history, it is certain that the Kaaba and the well Zemzem are among the most ancient of the antiquities of Arabia. They both were connected with the oldest rites of the pagan Arabs, and existed in very much their present form, and were applied to very much their present uses before the time of Mahomet. It was the prophet's grandfather who reopened the well, of the position of which he had been warned in a dream, whilst he was trying to devise some convenient means of fulfilling his special duty and privilege of supplying water to the tribes who flocked annually to worship at the Kaaba. Digging in the appointed spot, he found two golden gazelles, and some swords and suits of armour which had been buried there three centuries before, and further excavation revealed the remains of an ancient piece of masonry enclosing a copious and never-failing spring, which was at once accepted as the traditional well of Hagar. It is probable at least that the masonry dated from the old days of the mercantile prosperity of Mecca, perhaps even from pre-Christian times. Ever since this rediscovery of the well, Zemzem has held a prominent place among the holy things of the Arabian temple. The millions of pilgrims who have followed the steps of Hagar and ran naked from Safa to Marwa, and have performed the circuit of the Kaaba seven times, as their pagan ancestors did before Mahomet made the Meccan pilgrimage a part of his religion, do not leave the "Haram esh-Sherif" without washing in, or at least tasting, the water of the well Zemzem, and most of them carry away a flask of the holy water. No more valuable present can be offered by a returned Hajjy to his friends than a bottle of this miraculous, though admittedly brackish, fluid. Its properties are quite unique in the eyes of the faithful. It can cure diseases; sprinkled on grave clothes it produces the most salutary results in the future state of the deceased; while a single sip is the best cordial that a host can offer to his most distinguished guest. One famous traditionist, whose memory was proverbial, ascribed his retentive powers entirely to the copious draughts he had taken of the water of Zemzem, which Sale gravely remarks appears to be really as efficacious in its own province as the spring of Helicon has proved to the inspiration of poets. Professor Heaton's analysis of this miraculous water will cause a severe shock to all true believers who read THE LANCET, though from what one knows of the sanitary methods of the East there is nothing surprising in the discovery that the well of Zemzem is as foul as a good many other saintly springs. The water in the fountains of mosques never strikes the eye or nose with any very pleasing impression, and Zemzem is in the midst of a thickly-built city, where drainage is of a peculiarly primitive description, and the well is almost necessarily affected by the drainings from the countless carcases of beasts which are annually sacrificed by the pilgrims in the neighbouring valley of Mina. It is, however, some satisfaction to remember that muddiness in a source of inspiration has never been held a bar to miraculous effects, and that the impious Wotton, if we are to believe the "Battle of the Books," found slime even beneath the limpid waters of Helicon. Zemzem will doubtless work wonders in spite of the "completion of the putrefactive process."

STANLEY LANE-POOLE.

CHRISTMAS AT THE HOSPITALS.

WARM hearts and noble minds in the world of labour have found enough to exercise their faculties and sympathies in the round of entertainments customary at our hospitals at this season of the year. Those who have resided in hospitals at the time of the Christmas festivals must have a lively recollection of the giving and taking of enjoyment which such occasions subserve. If anything were calculated to touch the flinty heart of the miserable misanthrope, it would surely be a tour of our medical institutions during the past week or so. At most of the hospitals, in addition to the Christmas fare, some special treats have been furnished. We shall give a brief sketch of the kind of entertainment afforded to the inmates of many of the London hospitals.

Brompton Hospital.—The chapel attached to the Consumption Hospital was the scene of an interesting gathering on December 27th. The occasion was a confirmation held by the Bishop of London specially for the inmates of this hospital, when a number of them were presented by the Rev. J. Hughes-Owen, the chaplain. The chapel had been tastefully decorated with evergreens and flowers by Mrs. Hughes-Owen and friends, and was filled by the patients and officials of the institution. By the kindness of the Misses Heddy, assisted by a few friends, a large Christmas tree was provided for the inmates. The tree was placed in the spacious room in the new building set apart for lectures, concerts, and other entertainments. This room, though 19½ ft. high, was none too lofty for the tree, which, from floor to ceiling, was covered with a variety of presents—useful and ornamental—suitable for both sexes, for the grown up folks and children, there being always a number of the latter in the wards of the hospital. It was pleasant to watch the happy, expectant faces of the recipients of the gifts during the distribution, and the whole scene was most picturesque and animated. In the two fine buildings at Brompton there are 331 beds; and to keep up this large establishment, which is always full, the committee have, with a small exception, no resources save what the public supply from day to day. The new building, with 137 additional beds, has so much increased the expenditure that stock has had to be sold, and the hospital is wanting funds.

Guy's Hospital.—This institution presented a very cheerful and picturesque appearance in all the fifteen wards on Christmas Day. The friendly rivalry between the resident medical staff, the students, and nurses attached to the wards has been repeated again this season in the matter of decorations, with very pleasing results. In the children's wards gifts of toys were distributed in the morning. At 1 P.M. the old-fashioned Christmas fare of roast beef and plum-pudding was served out to nearly the whole of the 500 patients in the hospital. In the afternoon and evening the men were specially allowed to smoke, and various amusements and pastimes, including singing and pianoforte recitals, were also indulged in throughout the wards.

University College Hospital.—The customary annual Christmas entertainment to the patients of this hospital took place on December 28th, and was witnessed by a large number of the subscribers, the medical staff, patients, and their friends. As usual on these occasions, all the wards were thrown open for inspection, and were gaily decorated with holly, evergreens, flowers, and pretty models representing nursery rhymes and fairy tales, the work of the nurses and resident medical officers. A magic lantern was provided for the enjoyment of the children, whilst a concert served to entertain the adults. It was gratifying to note that about half of the patients at present in the wards were enabled to enjoy the entertainment offered. Those who were too weak to sit on the chairs in the concert-room were wheeled into the room on invalid chairs, while others, whose condition would not admit of their being disturbed, were conveyed in their beds. An admirable programme of instrumental and vocal music was supplied, the principal performers being the Strolling Players' Orchestral Society, Prof. Roberts, Miss Fraser, Miss May Olding, and Mr. Olding. To add to the festivity of the occasion, numerous sympathetic friends had sent toys, bonbons, fruit, and cake for the younger patients, while the male patients had been provided with the luxury of tobacco. Fifty sixpences were distributed among the children. The institution is sadly in want of funds.

St. Thomas's Hospital.—Here a substantial Christmas dinner was provided, consisting of over 300 lb. of choice sirloins and ribs of beef, followed by 250 lb. of plum-pudding. While the patients were partaking of this Christmas fare they were visited by Mr. Alderman Stone (treasurer), Mr. Walker (steward), Mrs. Wardroper (matron), and the visiting directors. The matron, as usual, presented the children with a Christmas tree decorated with toys.

Charing-cross Hospital.—As early as December 19th this hospital gave their fourth annual entertainment. Light comedy and music were the forms assumed for the evening's amusement. The various performers, consisting of the students of the hospital, assisted by lady amateurs, displayed a dramatic ability which was far above the average. Owing to the exigencies of space all the patients could not be present on the same evening, and therefore the performance was repeated on December 20th. In marked and favourable contrast with similar festivals at other places, care is taken that the visitors shall not monopolise the view of the stage to the seclusion of patients. After the overture, "Les Jolies Filles de Parme," which was excellently played by Messrs. Reade and Treasure, there was presented a comedy, adapted from "A Wonderful Woman," by Charles Dance. The evening was brought to a close with the farce of "The Turkish Bath." It may be mentioned that the scenery was painted by Mrs. Bloxam, the wife of Mr. Bloxam, of the surgical staff of the hospital.

St. Mary's Hospital.—The Christmas fare at this hospital was all that could be desired, and the time, care, and labour expended by the sisters, matron, and resident staff in decorating the various wards deserve great praise. In addition to the serviceable gifts of necessary articles of clothing, which constituted the Christmas-boxes, the patients' amusement was catered for by the performance of vocal and instrumental music. On Wednesday evening last a special entertainment for the patients took place in the accident ward of the new wing of the hospital. The programme included the exhibition of "Mrs. Jarley's Waxworks," which was received with marked appreciation. The show at St. Mary's Hospital was very well arranged, and the movements of the figures were at once gracefully jerky and life-like. We might well say with Dickens' Mrs. Jarley that there was no deception, *Summa ars est celare artem.* The next item on the programme was an overture rendered by the Orpheonic Amateur Orchestra, conducted by Herr Carl Ryall. Among the vocal performances we must specially mention that of Mr. Harley, who kindly gave his professional services on this occasion. His fine rendering of "Home, Sweet Home," was greeted with rounds of applause. Messrs. Critchett and F. St. George Mivart gave a vocal duet, and each was set down for a solo. Ladies also took part in the performances. It is needless to say the efforts of the performers were received with joyous acclamation.

The Hospital for Sick Children.—This institution, in Great Ormond-street, gave its special entertainment on Wednesday afternoon, commencing at 5 P.M. A monster Christmas-tree, lighted with small candles, formed the centre of attraction for the first part of the time. After the distribution of the toys on the tree, as well as of more useful presents given separately to each little patient, there was an excellent magic lantern show. This latter excited the imaginations of the children to the highest pitch, and the merry ring of their mirth-making laughter will linger long in the ears of those who heard it. The performances were well attended by the members of the staff and their friends. We may repeat here the fact that the hospital is not closed. One half of the establishment is still open for the reception of in-patients, the other moiety being in the hands of the sanitary engineers. The necessity of seeing to the state of the drainage has involved additional expense, and the funds of the hospital are in anything but a satisfactory state.

St. Bartholomew's Hospital.—Last Wednesday night a full dress rehearsal of "The Critic" was given in the great hall of this hospital for the amusement of all those patients who could be present, and a concert of vocal and instrumental music formed part of the evening's amusements. All the wards had been festively decorated, and the happiness of the patients secured, as far as possible, in the good old English fashion.

St. George's Hospital.—We understand that efforts were made by the resident medical staff to get up a Christmas-tree for the patients, but this well-meant object seems not to have met with approval by the committee of management. However, without any special *divertissement*, the patients were made comfortable and cheerful with the usual good things of Christmas.

Samaritan Free Hospital.—The various wards at this hospital, in Lower Seymour-street and at the Dorset House branch, were gracefully decorated with evergreens and mottoes. The children were entertained by a Punch and Judy show and a Christmas tree; the women at Seymour-street by a magic lantern; while at Dorset House a most successful performance of "Box and Cox" was given, together with a miscellaneous musical entertainment. Suitable presents were also provided for each of the patients.

THE BOWER AND KEATES CASE.

THE following contributions to the Indemnity Fund (fourth list) were received up to Saturday, December 29th. Since that date the number of replies sent in has been very large, and it has been found impossible to acknowledge them in the present issue:—

Wilson Fox, M.D., F.R.S.	£10	10	0
W. S. Savory, F.R.C.S.	10	10	0
Sir Henry Thompson, F.R.C.S.	10	0	0
Thos. Smith, F.R.C.S.	10	0	0
Chas. A. Adey, M.D., St. Leonards-on-Sea	5	5	0
Wm. F. Butt, Esq.	5	5	0
Ed. Clapton, M.D.	5	5	0
John E. Erichsen, F.R.S.	5	5	0
Barnard Holt, F.R.C.S.	5	5	0
Sir Edwin Saunders, F.R.C.S.	5	5	0
W. H. Walshe, M.D.	5	5	0
E. G. Barron, Esq., Plymouth	5	0	0
W. W. Kershaw, Esq., Surbiton ...	5	0	0
A. Farre, M.D.	3	3	0
Ed. Lund, F.R.C.S., Manchester ...	3	3	0
W. S. Playfair, M.D.	3	3	0
Wm. Priestley, M.D.	3	3	0
Septimus Sibley, F.R.C.S.	3	3	0
Edgcombe Venning, F.R.C.S.	3	3	0
John Wood, F.R.S.	3	3	0
J. M. Bright, M.D.	2	12	6
J. J. Eyre, Esq.	2	12	6

The name of Sir Andrew Clark, Bart., £10 10s., was accidentally omitted from the first list.

The following have sent two guineas each:—J. McCall Anderson, M.D., Glasgow; E. R. Bickersteth, F.R.C.S., Liverpool; Robert L. Bowles, M.D., Folkestone; J. Bridges, Esq. (Magistrate); T. Brunton, M.D.; J. M. Burton, F.R.C.S.; F. Le Gros Clark, F.R.S., Sevenoaks; Frederick Cock, M.R.C.P.; George Corfe, M.D., Brighton; L. J. Cumberbatch, M.D.; Thos. Dickenson, Esq.; C. F. Des Pasquier, F.R.C.S.; A. Evershed, M.R.C.P.; W. F. Favell, Esq., Sheffield; Geo. P. Field, Esq.; R. Temple Frere, M.A.; S. O. Habershon, M.D.; G. E. Herman, M.B.; Sir Trevor Lawrence, M.P., Dorking; J. Wickham Legg, F.R.C.P.; Thos. R. Lombe, M.D., Bemerton; J. W. Ogle, M.D.; J. McCarthy, F.R.C.S.; F. Orton, M.D.; E. Pearl, Esq., Windsor; Aug. J. Pepper, M.B.; C. D. F. Phillips, M.D.; H. T. Philpot, Esq.; Alex. Shaw, Esq.; Wm. Travers, M.D.; W. D. West, M. D., Epsom.

The following have sent one guinea each:—T. A. Adams, M.D.; Robert Marshall Allen, F.R.C.S., Grantham; John Armstrong, M.D., Dartford; Edward Andrew, M.D., Shrewsbury; George Granville Bantock, M.D.; J. Wright Baker, Esq., Derby; H. J. Barrett, Esq.; F. B. J. Baldwin, Esq., Rotherham; Thos. Barlow, M.D.; E. Buchanan Baxter, M.D.; T. Jarvis Bennett, M.D.; Edward Berney, F.R.C.S., Croydon; Tom Bird, Esq.; Valentine Bird, M.D.; A. Bishop, Esq.; J. Bisshopp, Esq., Tunbridge Wells; W. Blasson, Esq., Edgware; Francis Bossey, M.D., Redhill; Wm. H. Brace, M.D.; J. S. Brookfield, M.D.; Alex. Crum Brown, M.D., Edinburgh; Geo. Busk, F.R.C.S.; Edward H. Byas, Esq.; T. Brocks Bumpsted, Esq., Cambridge; D. Campbell, M.D., Ballachulish; E. H. Carter, Esq., Chelmsford; F. Chambers, Esq., East Margate; F. H. O. Chislett, Esq.; W. Cholmeley, M.D.; T. W. Christie, Esq., Liverpool; T. B. Christie, M.D., Ealing; J. T. Churchill, Esq., Chesham; W. 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Alfred Taylor, Esq., Ainsworth, fifteen shillings.

The following have sent half a guinea each:—Geo. Abbott, Esq., Wigan; C. E. Abbott, Esq., Bocking; T. Rutherford Adams, M.D., Croydon; Chas. Edward Addison, Esq., Colchester; J. C. Armstrong, Esq., Gravesend; B. Russell Baker, Esq., Prestwich; Samuel Barker, M.D., Brighton; M. W. Berry, Esq.; Henry Bowen, Esq., Blockley; M. M. Bradley, M.D., Jarrow-on-Tyne; J. Carey, M.D., Taunton; John William Coles, Esq.; William Harry Cooke, M.D., Aldridge; G. Dickson, M.D., Edinburgh; Theo. Duka, M.D.; A. Eddowes, Esq., Loughboro'; J. H. Eddowes, Esq., Loughboro'; Jonathan Elmes, M.B., Limerick; P. H. Emerson, Esq., Cambridge; F. W. Evans, M.D., Cardiff; Jas. W. Fleming, M.D., Glasgow; Lewis Ford, Esq.; W. Fell, M.B.; D. H. Forty, Esq., Wootton-under-Edge; J. F. France, F.R.C.S.; Alex. Gray, M.D., Dalton-in-Furness; Thos. Scott Gray, Esq., Dundee; Charles Greer, F.R.C.S.; F. J. Gobat, Esq., Overton; Stanford Harris, Esq., Pendlebury; Frederick H. Haynes, M.D., Leamington; N. Fenwick Hele, Esq., Aldeburgh-on-Sea; H. Howard, M.B.; E. Humby, M.D.; Edward Ilott, F.R.C.S., Brom-

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The following have sent ten shillings each:—Dennis Adams, Esq., Cambridge; Onslow Andrews, M.D., Clifton; E. A. Applebe, Esq., Hay; Robert Atkinson, Esq., Ripponden; M. Baines, M.D.; A. H. Balfour, Esq., Portobello; F. T. Barkway, Esq., Lavenham; F. E. Beck, F.R.C.P., Belfast; J. G. Biggs, Esq.; John Bower, Esq., M.D., Perth; D. Biddle, Esq., Kingston-on-Thames; A. Boyle, Esq., Pill; L. W. Browne, M.B.; R. E. Burges, M.D., Kettering; D. Bradley, Esq., Dudley; J. P. Bradley, F.R.C.S., Birmingham; John Briscoe, F.R.C.S., Oxford; Thos. Brookes, Esq., Tavistock; G. Paddock Bate, M.D.; G. S. Brady, M.D., Sunderland; James G. Cahill, Esq., Mullingar; G. Carden, M.D., Bath; John Cheesman, M.D., Buckingham; George Colby, Esq., New Malvern; J. Cooke, M.B., Tennenhall; J. H. T. Connor, Esq.; James Couch, Esq., Swansea; John F. Cullen, M.D., Alexandria; George Dale, M.B.; F. R. P. Darke, Esq., Salisbury; H. Davy, M.D., Southernham; D. Dickson, Esq., Ledbury; Robert Elliott, Esq., Haydon Bridge; F. J. Elson, Esq., Whitwell; B. Fenwick, M.D.; D. Forbes, M.D., Rockferry; H. W. Furnivall, Esq., Exeter; D. Hoadley Gabb, Esq., Hastings; Chas. J. Gibb, M.D., Newcastle-on-Tyne; J. J. Godfrey, Esq., Cleobury-Mortimer; W. A. Garrard, Esq., Rotherham; E. Garraway, Esq., Faversham; Bruce Goff, M.D., Bothwell; Arthur R. Graham, M.B., Weybridge; Archd. Hamilton, M.D., Windermere; James A. Harris, M.D., Chorley; J. F. Hillier, Esq., Ramsgate; J. Hochee, Esq.; C. A. Holcombe, M.D., Liverpool; S. Holdsworth, M.D., Wakefield; Henry Horsley, Esq., Croydon; V. Holberton, Esq., Hampton-on-Thames; A. R. Hopper, Esq., Liverpool; R. Howard, M.D., Hyde; J. D. Hulme, M.D., Wigston Magna; Chas. H. Humphrey, Esq., Chislehurst; W. Tiffin Iliff, M.D.; J. J. Jamieson, M.D., Edinburgh; J. R. Kealy, M.D., Gosport; David King, M.D., Eltham; W. Kidd, M.D., Blackheath; T. Wilson Laird, Esq., Exeter; T. Warner Lacey, Esq., Plumpstead; Josiah Leale, Esq., Guernsey; Joseph Cooper Leab, F.R.C.S., Hyde; Henry Lewis, M.D., Folkestone; Edward R. Lock, Esq., Debenham; T. Lamont Macartney, Esq., Wrotham; M. J. Malone, M.D., Limerick; Joseph Matthew, Esq., Liverpool; John McCormac, Esq., Snidley; James McGregor, Esq., Portsmouth; W. J. Marshall, M.D., Greenock; James Morris, Esq., Dunfermline; H. Minchin, M.B., Dublin; T. H. Mulock, M.D., Moate; E. S. Norris, M.B., Windsor; D. C. W. O'Connor, Esq., LL.D., Cork; C. Ogden, Esq., Rochdale; J. O'Fleherty, Esq., Kingstown; William Alex. Orr, M.B., Johnstone, N.B.; L. Parnell, Esq.; S. B. Partridge, Esq., Anerley; Wm. Pearson, Esq., Glasgow; G. M. Pittock, M.B., Margate; P. K. Picard, M.D.; A. Playne, M.B., Maidenhead; William Powell, M.B., Torquay; R. E. Power, Esq., Portsea; A. G. Proctor, Esq., Witham; A. Rabagliati, M.A., M.D., Bradford; Hugh Rees, Esq., Carnarvon; H. P. Roberts, F.R.C.S.; J. W. Robinson, M.D.; J. M. Ryan, M.B., Colchester; H. R. O. Sankey, M.B., Hatton; Thos. Sharpley, M.D., Eastgate; H. W. Sharpin, F.R.C.S., Bedford; Edward Skinner, Esq., Sheffield; H. N. Smith, Esq., Brighton; E. G. C. Snell, Esq.; Thos. Smith, F.R.C.S.; G. Stock, Esq., Bristol; Wm. G. Stutter, F.R.C.S., Wickhambrook; Wm. Sutherland, Esq., Cupheaton; G. B. Sweeting, Esq., King's Lynn; Henry T. Sylvester, M.D.; J. Wm. Taylor, F.R.C.S., Birmingham; G. C. Tayler, M.D.; A. Teevan, Esq.; J. Archer Thompson, M.B., Brighton; William Thorne, Esq.; J. Y. T. Totherick, M.D., Wolverhampton; J. C. Uhthoff, M.D., Hove; Robt. Wallace, F.R.C.S., Carlisle; John Watson, M.D., Ardwick; Saml. Watson, F.R.C.S., Hull; Thos. Walker, Esq., Wakefield; W. A. R. Waller, Esq., Rugby; A. Weir, M.D., Malvern; J. Bywater Ward, M.D., Oxford; W. M'C. Watson, M.D., Montrose; Richard H. Wilbe, M.D.; Geo. Weller, Esq., Wanstead; J. Mitchell Wilson, M.D., Doncaster; N. V. Wise, Esq., Trowbridge; J. W. Workman, Esq., Reading; F. S. Worthington, Esq., Lowestoft; John H. Wood, M.B., Ledbury; H. T. Woodd, Esq., Calstock; T. H. Wright, Esq., Halifax; W. E. Wyllys, Esq., Great Yarmouth; Moffat Young, Esq., West Hartlepool; E. H. Lendon, M.B.

The following have sent seven shillings and sixpence each:—W. F. Brook, Esq., Fareham; J. A. Brown, Esq., Peckham; A. B. Kernot, Esq., Reeth; H. W. Page, F.R.C.S.; J. Sloan, M.B., Bramley.

The following have sent five shillings each:—Anonymous; G. G. Alford, Esq., Weston-super-Mare; R. Alford, F.R.C.S., Weston-super-Mare; A. Allen, M.D., Keelby; J. Anderson, M.B., Poulton-le-Fylde; W. H. Axford, M.B., Southsea; A. H. Bampton, M.D., Plymouth; T. Batton, F.R.C.S., Coleford; R. L. Batterbury, M.D., Berkhampstead; W. J. Beatty, Esq., Stockton-on-Tees; A. Benson, M.B., Sutton; W. Berry, Esq., Holmforth; W. Berry, Esq., Wigan; F. T. Bond, M.D., Gloncester; W. S. Boyce, Esq., Leominster; G. Browney, Esq., Aughtbridge; Jno. Brown, Esq., Bacup; R. Bryden, Esq., Uffculme; J. H. Buchanan, M.D., Thirsk; S. J. Burrows, Esq., Witheridge; Hatton Castle, M.B., Newport; Horace Chaldecott, Esq., Dorking; A. Chawner, Esq., Clay Cross; B. Chevallier, M.D., Ipswich; C. C. Claremont, M.B.; A. Clarke, Esq., Ingatestone; E. Clarke, M.B., Worcester; R. A. Clarke, Esq., Bolton; W. T. Clegg, Esq., Liverpool; C. S. W. Cobbold, M.D., Redhill; W. Cockcroft, Esq., Cutterick; T. Collier, Esq., Ripon; G. E. Coleman, Esq., Hemsworth; J. B. Collyns, Esq., Dulverton; J. Connel, M.D., Peebles; S. W. Coombs, F.R.C.S., Worcester; J. Cotman, Esq., Minories; C. Cotton, Esq., Ramsgate; Eli Crew, Esq., Alderley Edge; J. Daniel, Esq., Cheadle; W. A. Dartnell, Esq., Rochester; A. W. Dowding, M.D.; T. Duke, Esq., Rugby; E. Duncan, M.D., Crosshill; W. Duncan, M.B., Leith; J. J. M. Dunbar, M.D.; J. Earle, Esq., Manchester; A. B. Elliott, F.R.C.S.; Rochdale; C. Elliott, M.D., Clifton; H. D. Ellis, M.D., Eastbourne; R. Eustace, M.D., County Down; M. G. Evans, M.D., Cardiff; W. E. Evans, Esq., Bath; T. Fiddes, M.B., Wimston; R. Forsyth, M.D., Birstall; A. Fry, Esq., Moate; T. Fulton, Esq., Saintfield; J. C. Garman, Esq., Wednesbury; W. Garman, Esq., Wednesbury; G. St. George, Esq., Lisburn; F. G. Goodman, Esq., Brigg; J. Goodman, Esq., Southport; F. J. Gray, Esq., Cannock; M'Grigor, Esq.; N., Hannah, Esq., Ashton-in-Makerfield; W. J. V. Harle, Esq.; J. Harrison, Esq., Braintree; J. Harrison, jun., Esq., Braintree; C. J. Harris, Esq.; W. H. Hayes, Esq., Farnham; W. Hickman, M.B.; J. Sinclair Holden, M.D., Sudbury; S. W. Hope, Esq., Petworth; J. Hopkins, Esq; W. Hoyle, M.A., Edinburgh; J. H. Hutchins, F.R.C.S., Rochester; W. E. Hyde, Esq., Leominster; W. Inman, M.D., Liverpool; H. J. Ilott, M.D., Bromley; E. Jackson, Esq., Whalley Range; P. Jamieson, F.R.C.S. Ed., Peterhead; E. C. Jepson, F.R.C.S., Durham; E. Jepson, Esq., Durham; G. Johnston, M.D., Darlington; F. Johnston, Esq., Glasgow; W. Johnstone, Esq., Smethwick; G. W. Jollye, Esq., Donnington; A. Jones, M.D., Harrogate; V. B. Jones, Esq., Whitland; W. A. Kebbler, M.B.; A. Kempe, M.R.C.P., Exeter; A. S. Kenny, Esq.; C. Kennedy, M.B., Edinburgh; S. Kennedy, Esq., Bristol; J. G. Kenyon, Esq., Bradford; A. P. Kingscombe, Esq., Towcester; W. Lake, Esq., Plumstead; W. Langston, Esq., Pembridge; T. M. Leak, Esq., Hemsworth; Lewis Lewis, Esq.; T. Lottis, Esq., Great Yarmouth; R. Lowther, M.D., Cartmel; J. G. Macaskie, Esq., Bamburgh; A. Mackintosh, M.D., Glasgow; J. Marshall, Esq., Dover; F. Mason, Esq., Bath; P. B. Mason, Esq., Burton-on-Trent; C. E. Matthews, Esq., Bristol; T. Maxwell, M.D.; G. F. W. Meadows, Esq., Otley; J. Meredith, M.D., Wellington; T. C. Mitchell, Esq., Thirsk; G. Moore, M.D., Jersey; J. Gidley-Moore, Esq., Ongar; R. Wilson Moore, Esq., Wednesbury; J. Morgan, Esq., F.R.C.S., Langport; J. B. Moxon, Esq., Brigg; C. H. Mules, Esq., Ilminster; C. Munden, Esq., Ilminster; W. Murray, M.B., Haydon Bridge; H. Ortour, Esq., West Town; T. Ormrod, Esq., Workington; A. H. Page, M.D., Heckmondwike; M. Palmer, Esq., Newbury; S. H. Poole, M.D., Sidcup; J. Wyatt Pratt, Esq., Wivliscombe; J. Prankerd, F.R.C.S., Langport; J. Platt, Esq., Man-

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The following have sent two-and-sixpence each:—G. N. Adams, M.D., Rippingale; J. Anthony, Esq., Skipton; D. B. Bain, M.D., Dundee; Wm. Barron, M.B., Lettham; H. T. Bassett, M.B., Birmingham; G. Buchan, M.B., Kilmaurs; J. Clarke, Esq., Belfast; J. Comrie, Esq., Peterhead; R. G. Coombe, Esq., Burnham; P. M. Cullinan, M.B., Ennis; C. F. George, Esq., Kirton-in-Lindsey; H. George, Esq., North Thoresby; J. W. Edgar, M.D., Kirkby-Stephen; M. R. Farrer, M.B., Kirkby-Stephen; E. Exell, Esq., Sheffield; W. P. Fisher, Esq., Norbiton; D. A. Fraser, Esq., Burnham; G. Gray, M.D., Castle Wellan; C. E. Hewitson, Esq, Weardale; J. M. Hobson, M.D., Croydon; G. R. Howat, Esq.; —McCormac, Esq., Glenluce; D. S. McDonald, M.D., Inverness; F. W. D. McGachen, Esq., Olney; J. Lawrence, M.D., Darlington; H. Marshall, M.D., Clifton; B. A. Mossman, F.R.C.S., Brough; R. H. Newell, Esq., Belfast; F. Palmer, F.R.C.S., Great Yarmouth; W. Pearce, Esq., Paddington; G. S. Penny, Esq., Cheltenham; D. McConnell Reed, Esq., Southampton; J. Robertson, M.D., Dumbarton; E. O. Ryan, M.D., Shanocoole; E. F. Scougal, Esq., Huddersfield; J. H. Sewart, Esq., Lostwithiel; A. Steven, M.D., Clifton; D. Stewart, M.D., Nottingham; J. M. K. Taylor, Esq.; H. Teevan, Esq.; J. Thompson, M.D.; C. Thompson, M.B.; W. Walker, Esq., Redcar.

Other smaller sums:—J. Galt, F.R.C.S., St. Boswells; L. A. O. M.; E. Swinden, Esq., Watford; T. G. Thursfield, M.D., Brosley; A. Wallace, Esq., Colchester; C. H. Well, Esq., Hawkhurst; R. G. Burton, M.D., Hanwell.

ERRATUM.—In last week's list, for Henry J. Buck, Esq., Clapham, read "Henry J. Buck, Esq., Clapton-common, E."

F. A. MAHOMED, } Hon. Secs.
R. W. BURNET, }

Royal College of Physicians, Pall-mall East, S.W.

At a meeting of the Committee, held at the residence of Sir William Jenner, on Thursday, January 3rd, 1884, it was resolved:—"That the Committee, having obtained subscriptions sufficient to meet the legal expenses incurred in the case of Messrs. Bower and Keates, beg to intimate that the list will be closed on Saturday the 5th inst. They will, however, be glad to receive further signatures to the memorial."

F. A. MAHOMED, } Hon. Secs.
R. W. BURNET, }

A FIRE broke out on the 1st inst. in the Glasgow Public Fever Hospital at Belvedere. The flames were fortunately prevented from reaching the main structure; and, although considerable alarm prevailed among the patients, it was not found necessary to remove any of them.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Tynemouth Rural District.—A very detailed report on the sanitary condition of this district, which borders on the mouth of the Tyne and which has a population of nearly 22,000 persons, has been presented to the Local Government Board by Dr. Barry. One of the most interesting features of the report is a description of the dwelling accommodation provided for this coal-mining district. In some parts the old miners' hovels with their unceiled lofts reached by trap-doors, the whole being ill-lighted, unventilated, undrained, and without privy accommodation, remain to show what used formerly to be regarded as good enough for this portion of the population. At the other end of the scale come the modern mining villages, with good dwellings having ample sitting-room and bedroom accommodation, and being provided with separate means of drainage and decent means of excrement disposal. Much has been done in the direction of the latter provision by the sanitary authority, but the district has yet to learn that it is by no means a necessity of civilisation that people should store up large amounts of excrement and filth close to their dwellings, and all but under their bedroom windows. The almost unrestricted prevalence and fatality of scarlet fever in this and similar districts is specially referred to by Dr. Barry. The record given as to it is rightly called a monotonous one, for the disease seems never to be absent, and it only awaits the periodical accumulation of fresh groups of little children who have not been protected by a previous attack in order to break out in an epidemic form and give rise to a large and pitiable mortality. The rapid spread of the infection is in the main attributed to the unrestricted intercourse which goes on between the sick and the healthy, and to the limited space which is available in many of the cottages and which prevents anything like isolation. One means by which the dissemination of the poison is favoured is the habit of the parents to congregate and gossip, with children in their arms, around the several stand-pipes for water, which here and there are provided for the long rows of cottages. There is also general intermixing of children at play; and the local medical officer of health has specially called attention to the foolish custom of great numbers of young people attending funerals and sitting in the same room where the patient had lain, and to the habits which prevail of visiting relatives whilst sick. No statutory provision can well deal with such follies, and we must trust to advancing education to secure the diminution of preventable disease and death which the abandonment of such customs would effect.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Paddington.—Dr. Stevenson's last annual report gives the birth-rate for this parish as 26·8, and the death-rate as 16·3 per 1000 on an estimated population of 108,370. Some account is given as to the prevalence of zymotic diseases, and brief reference is made to the water-supply and to certain views held by Dr. Frankland. This is followed by a series of tables, but the report is silent as to the sanitary conditions of the district, as to any improvements in the conditions under which the people live, and as to any remedial measures which may be needed.

Wandsworth.—This district has a population of 221,029 with a density of 18·8 per acre. In 1882 the births were at the rate of 35·6 and the deaths of 17·4 per 1000 living. Putney is that portion of the district where epidemic diseases reached the highest rate per population. The nuisance from pig-keeping has been attacked, and twenty-eight convictions obtained. It is hoped that this may be accepted as a warning by others, and that the great evils arising from pigs may be abated. The scavenging is badly done; there is an absence of paving and surface drainage in the courts of the poorer classes, and it is also alleged that the method of ventilating the sewers is effected at the expense of aerial purity in the streets, and in such a way as to cause nuisance. The amount of water supplied by the water companies has

been diminished, it being now from thirty to thirty-three gallons per house a day. This is insufficient to cleanse the sewers effectually, and in consequence the ventilators are a special nuisance at night when the smallest quantity of water is admitted into the sewers. The several medical officers further point out that, according to Dr. Frankland, the Southwark Company, which supplies the greatest part of the district, provides one of the worst waters delivered to the metropolis, and they advocate the provision of a supply from deep chalk wells. Separate reports in each of the divisions of the district are appended by the several medical officers of health.

Dublin.—Dr. Cameron, medical superintendent officer of health, in his report for the five weeks ended November 3rd, states that the births registered as having occurred within the city numbered 717, and were in the ratio of 29·76 per 1000 of the population; while the deaths numbered 661, or at the rate of 27·44 per 1000. The deaths from the seven principal zymotic diseases were in the whole registration district in the ratio of 3·7, and in the city 4·04. As compared with the preceding month, the deaths from scarlet fever increased very largely, whilst those from diarrhœa decreased by nearly one-half. The deaths from whooping-cough and typhoid fever decreased considerably. No death from measles was recorded in either October or September. The death-rate (27·44) was in excess of that of the corresponding month in 1881 and 1882; and the zymotic death-rate was lower than in September.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns, 4332 births and 3397 deaths were registered during the week ending the 29th ult. The annual death-rate in these towns, which had been 22·6 and 21·9 per 1000 in the two preceding weeks, further declined last week to 20·6. During the thirteen weeks ending Saturday last, the death-rate in these towns averaged 21·2 per 1000, against 22·1 and 23·0 in the corresponding periods of 1881 and 1882. The lowest rates in these towns last week were 15·5 in Bradford, 15·9 in Portsmouth, and 16·4 in Halifax. The rates in the other towns ranged upwards to 25·0 in Blackburn, 25·4 in Manchester, 25·6 in Norwich, and 25·8 in Newcastle-upon-Tyne. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had been 455 and 473 in the two previous weeks, declined last week to 413; they included 109 from measles, 104 from scarlet fever, 80 from whooping-cough, 55 from "fever" (principally enteric), 31 from diphtheria, 23 from diarrhœa, and 11 from small-pox. No death from any of these diseases was registered last week in Portsmouth, Norwich, or Halifax; whereas they caused the highest death-rates in Leeds and Brighton. The highest death-rates from measles occurred in Birkenhead and Manchester; from scarlet fever in Leeds and Newcastle-upon-Tyne; from whooping-cough in Brighton and Sheffield; and from "fever" in Blackburn and Preston. The 31 deaths from diphtheria in the twenty-eight towns included 22 in London, 3 in Hull, and 2 in Liverpool. Small-pox caused 4 deaths in Birmingham, 4 in Liverpool, 2 in London, and 1 in Sunderland. The number of small-pox patients in the metropolitan asylum hospitals, which had been 90 and 89 on the two preceding Saturdays, further rose to 98 at the end of last week, a higher number than has been under treatment since the end of January last; 16 new cases were admitted to these hospitals during last week, against 29 and 17 in the two previous weeks. The Highgate Small-pox Hospital contained 9 patients on Saturday last, three new cases having been admitted during the week. The deaths referred to diseases of the respiratory organs in London, which had been 471 and 391 in the two preceding weeks, further declined to 355 last week, and were no fewer than 239 below the corrected weekly average. The causes of 117, or 2·9 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Bradford, and in three other smaller towns. The proportions of uncertified deaths were largest in Sheffield, Sunderland, Wolverhampton, Derby, and Oldham.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been equal to 22·4 and 21·1 per 1000 in the two previous weeks, rose again to 22·1 in the week ending the 29th ult.; this rate was 1·5 above the mean rate during the same week in the twenty-eight large English towns. The rates in the Scotch towns ranged from 16·3 and 18·7 in Paisley and Dundee, to 24·2 and 25·7 in Glasgow and Aberdeen. The deaths in the eight towns included 86 which were referred to the principal zymotic diseases, against 64 and 84 in the two preceding weeks; 22 resulted from whooping-cough, 20 from scarlet fever, 18 from diphtheria, 13 from diarrhœa, 7 from measles, 5 from "fever," and one from small-pox. These 84 deaths were equal to an annual rate of 3·6 per 1000, which was 0·9 above the mean rate from the same diseases in the large English towns. The rates from these diseases in the Scotch towns ranged last week from 1·7 in Perth to 4·9 in Glasgow, and 5·2 in Aberdeen. The 22 fatal cases of whooping-cough were within one of the number in the previous week, and included no fewer than 18 in Glasgow. The 20 deaths from scarlet fever showed a further increase upon recent weekly numbers, and included 17 in Glasgow. Of the 18 referred to diphtheria 6 occurred in Glasgow, 5 in Aberdeen, and 2 each in Leith and Paisley. Six of the 7 fatal cases of measles were returned in Edinburgh, and 3 of the 5 deaths from "fever" in Glasgow. The death from small-pox occurred in Glasgow. The 108 deaths referred to acute diseases of the respiratory organs in the eight towns showed an increase of but 4 upon the low number in the previous week, and were 91 below the number in the corresponding week of last year. The causes of 99, or more than 18 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been equal to 33·3, 32·1, and 36·1 per 1000 in the three previous weeks, declined to 27·5 in the week ending the 29th ult. The mean death-rate in the city during the thirteen weeks ending last Saturday was equal to 28·0 per 1000, whereas it did not exceed 20·3 in London and 19·1 in Edinburgh. The 184 deaths in Dublin last week showed a decline of 58 from the high number returned in the previous week; they included 6 which were referred to scarlet fever, 5 to "fever," 3 to whooping-cough, 1 to measles, 1 to diarrhœa, and not one either to small-pox or diphtheria. Thus 16 deaths resulted from the principal zymotic diseases, against 28, 24, and 19 in the three previous weeks; they were equal to an annual rate of 2·4 per 1000, while the rate from the same diseases was 2·7 both in London and in Edinburgh. The fatal cases of scarlet fever, which had been 16 and 8 in the two preceding weeks, further declined to 6 last week; during the last three months of last year 137 deaths from this disease occurred within the city, against 3, 6, and 33 in the first three quarters of the year. The 5 deaths referred to "fever" (including typhus, typhoid, and simple fever) were within one of the number in the previous week; the 3 deaths from whooping-cough showed a slight increase. The deaths both of infants and of elderly persons showed a considerable decline from the numbers in the previous week. The causes of 28, or more than 15 per cent., of the deaths registered during the week were not certified.

THE SERVICES.

ARMY MEDICAL DEPARTMENT.—Surgeon-Major Robert Gillespie, M.D., is granted retired pay, with the honorary rank of Brigade Surgeon.

ADMIRALTY.—Staff Surgeon John Thomson Comerford, M.D., has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet.

RIFLE VOLUNTEERS.—1st (City of Bristol) Volunteer Battalion, the Gloucestershire Regiment: Acting Surgeon Alexander Steven, M.D., resigns his appointment. James Paul Bush, Gent., to be Acting Surgeon.—1st Middlesex (Victoria): Surgeon William George Shepherd, M.D., is granted the honorary rank of Surgeon-Major.—2nd Volunteer Battalion, the Norfolk Regiment: Acting Surgeon William Mallam Vores, M.B., from the 1st Norfolk Artillery Volunteer Corps, to be Surgeon.

WILLS OF MEDICAL MEN.

THE will of Mr. John Harry Littler, a retired Surgeon-Major from the Indian army, late of the Charing-cross Hotel, who died on October 22nd last, was proved on the 5th ult. by Mr. Thomas Higgs and Mr. Arthur Nonus Birch, the executors, the value of the personal estate amounting to upwards of £41,000. The testator leaves £250 to each of his executors, and the residue of his estate upon trust for Marianne Ducker for life, and then for her issue as she shall appoint, with a condition that she and any husband to whom she may be married shall take the surname of "Littler."

The Scotch confirmation under seal of the Commissariot of the county of Edinburgh, signed November 3rd last, of the holograph trust disposition and settlement dated March 31st, 1883, of John Grant, M.D., Deputy Inspector-General of Hospitals, retired list, late of 6, Wardie-avenue, Edinburgh, who died on Sept. 23rd, granted to the Rev. Peter Chalmers Purves, David Craig and John Grant, and James Cameron Grant, the sons, the executors nominate, was sealed in London on November 24th, the value of the personal estate in England and Scotland amounting to over £8800.

The will of Mr. James Webster, formerly a surgeon, late of 144, High-street, Ramsgate, who died on October 13th last, was proved at the Canterbury district registry on Nov. 16th by Messrs. Lawrence William Vaile, Owen Fisher Daniel, and James Thomas Hillier, the executors, the value of the personal estate being over £6000. The testator bequeaths many pecuniary and specific legacies, including £500, free of duty, to the vicar and churchwardens of St. George's Church, Ramsgate, towards the alteration and improvement of the said church. The residue of his personal estate he leaves to the treasurer of the Ramsgate Seamen's Infirmary, to be applied in forming, or in assisting in forming, a fund for the maintenance of a ward for accidents or other cases requiring surgical operations or appliances.

The will of Anthony Southby, M.D., of Bulford, Wilts, who died on Aug. 10th last, was proved on Nov. 15th last by Miss Lucy Harriet Southby, the daughter, the sole executrix, the value of the personal estate exceeding £4300. The testator gives all his personal estate to his two daughters Lucy Harriet and Claudia Jane, to be equally divided between them.

The will of John Rudall Holman, M.D., Fleet Surgeon, R.N., late of Brunswick Villa, Gipsy Hill, Norwood, who died on September 19th last, was proved on Nov. 24th by the Rev. William Henry Holman, the brother, and Mr. Francis Rudall, the executors, the value of the personal estate amounting to over £3600. The testator leaves all his property to his four children Herbert Liddell Holman, Frank Kaye Holman, Edith Holman, and Mary Holman, in equal shares.

The will and codicil of Charles Stewart Clouston, M.D., formerly of the town of Hay, Breconshire, Surgeon, but late of Gunnersbury, Middlesex, who died on Sept. 16th last, at Stromness, Orkney, was proved on Nov. 22nd by Mrs. Emma Clouston, the widow, and Mr. Thomas Glover, the acting executors, the value of the personal estate exceeding £2000. The testator leaves his furniture, plate, and household effects to his wife, and the residue of his real and personal estate, including his share of property in Orkney, to his wife for life or widowhood, and then to all his children in equal shares.

The following legacies have recently been left to hospitals and other medical charities:—Sir Edward Henry Scott, Bart., of Sundridge Park, Kent, and of 1, Cavendish-square, Banker, £500 to the Middlesex Hospital, £400 to the Bromley Cottage Hospital, and £300 to St. Mary's Hospital.—Mrs. Caroline Elizabeth Case, of 12, Clifton-crescent, Folkestone, £300 to the Liverpool Royal Infirmary.—Mrs. Jane Austen, of 51, Warrior-square, St. Leonards-on-Sea, £100 each to the St. Leonards Infirmary, the Home for Invalid Gentlewomen, St. Leonards-on-Sea, and the Convalescent Home for Children, St. Leonards-on-Sea, and £25 to the Children's Hip Hospital, Sevenoaks Vine.

A CENTENARIAN.—An inmate belonging to the Dublin Female Penitentiary died recently at the extraordinary age of 107 years.

Correspondence.

"Audi alteram partem."

THE DISCUSSION ON "CATHETER" OR URINARY FEVER.

To the Editor of THE LANCET.

SIR,—As you have done me the honour to submit my little address on "Catheter Fever" to an extended and a close criticism, and as you have advanced therein certain objections to which I can return, as I believe, conclusive replies, I trust that, in view of the admitted importance of the subject, you will grant me space in your columns to set them forth. And here, at the beginning, let me remind you that in giving this address my professed object was to say that among the various forms of fever sometimes following catheterisation there was one in which, when it ended fatally, an autopsy revealed no visible adequate structural cause of death; that in some of those cases death might be avoidable; and that further information was needed.

Let me now proceed to examine the objections which, in your criticism, you have offered to my manner of dealing with the subject and to my views.

1. You say that I have given an incomplete view of the literature of the subject, and that I might have gone further back than 1800 to show that the supervention of constitutional disturbance upon catheterisation was distinctly recognised. Now, by the traditions of the Medical Society, as well as by the necessity of leaving sufficient time for discussion, the communication could not be made longer than one could read aloud in about half an hour. I had before me a great store of material; and hours might have been occupied in its oral communication. And yet it was necessary, to the complete understanding of my propositions, that their place in the historical development of the subject should be shown. What in such circumstances could be done? A critical examination of the whole literature of the subject plainly showed that it might be divided into periods or epochs; that each epoch was characterised either by the birth of a new or the rejuvenescence of an old idea; and that those ideas, whilst laying open fresh sources of knowledge and guiding its progress, gave cohesion, unity, and permanence to the facts out of which they arose. The lesson to be learned from this examination was clear. In the circumstances my only and my sufficient course was to set forth the opinions of those writers who, by experience and study of the subject, moved their contemporaries to fresh trains of thought and into new lines of practice. This course I adopted, and however incomplete my historical conspectus[1] may be, it is, on the lines laid down, at least more complete than the monographs of Marx and Malherbe, the historical storehouses in which almost every subsequent writer has found his information.

2. You aver that my paper is seriously misleading in at least one particular: in that it regards as of equal value with the researches of such recent observers as Marcus Beck the statements of Velpeau, made before Bright first threw light upon renal pathology, before anything was known of interstitial nephritis, and before those minute changes in the kidney, now acknowledged to be important, were, or could be, recognised by pathologists. A careful reperusal of the historical part of my address fails to reveal to me a single sentence in which it could be justly said that, either implicitly or explicitly, I placed, for the purpose in view, the pathological work of Velpeau on a level of importance with the pathological work of Marcus Beck. Indeed, I have spoken of the work of this observer in terms which I have used concerning the work of no other. Whilst saying of Beck that his work bears upon it the marks of practical knowledge, accurate observation, and careful thought, I have said of Velpeau, when first discussing the pathogenesis of urinary fever, that as at the time he was, perhaps, walking in darkness, he could not help being obscure and vague. But if in 1832, before, as you allege, "Bright first threw light upon renal pathology, and before anything was known of interstitial nephritis," Velpeau declared that urinary fever sometimes

[1] With its accompanying table of authorities suspended on the Society's walls during the reading of the paper, but not yet printed.

ran to a fatal issue without structural changes being found after death adequate to account for it, was I to hold as nothing the results of a naked-eye examination made by a great surgeon in the presence of practised pathologists? Was I to hold as then, what is not now, proven that structural changes in the kidney, invisible to the naked eye, could bring about uræmic fever and death? Was I to suppress from an historical conspectus, because in their earlier forms of expression vague, the first methodically formulated ideas of urinary fever—ideas which, as afterwards set forth, have anticipated some, and made an indelible impression upon all, the researches of these days? But it is not only not certain, it is even exceedingly improbable, that Velpeau was or could be ignorant of the researches of Bright, which, as stated by Barlow, were first published in 1824. Now, Velpeau spoke twice: first with some obscurity and hesitation, and next, in his "Leçons Orales," with clearness and decision. Probably before the first, certainly before the second, of those utterances the labours of Bright had become known and understood in France. Paris had been the field of hotly contested battles over renal pathology; and Velpeau, in face of the nephritic theory, of all that was adduced in support of it, and of the force of the prevailing fashion, held to his original contention that urinary fever may have a fatal ending when the autopsy reveals no adequate structural cause for death.

3. You tax my propositions with being so remarkably vague in spite of their apparent precision of language that they are difficult to criticise, and are incapable at once of assent or of rejection. To substantiate this accusation, it must be shown in some particular instance or instances that either from confusion of thought or from inaccuracy of language nothing concerning the matter in hand is distinctly affirmed or distinctly denied. Now, reading these propositions again and again, with the help of adverse criticism, I cannot see, unless in one instance, where they fail in conception or expression plainly to affirm or to deny something of which the opposite could be said. And in the instance excepted I am dealing with the theory of a fever in words and phrases which, intelligible enough to recent physiological workers, keep as closely to the point and are as precise as the present state of knowledge will permit.

The proposition which you bring forward and for the most part deal with in support of your accusation of vagueness does not, I venture to say, sustain it. It is the first proposition, and if it errs at all in respect of manner and form it errs by two minute and precise limitations and qualifications, and not by loose, uncertain, or contradictory statements. Here it is:—"That about middle life in men perfectly healthy, or with no discoverable evidence of disease, except perhaps, and even that not always, a low density of urine, the commencement of the habitual use of the catheter is sometimes followed by fever.....which often [it should read *sometimes*] ends in death. And that.....in such cases no adequate structural explanation can be found."

Now, in this proposition there are contained two plain statements about middle-aged people with recently noticed bladder trouble entering upon catheter life—the one, that men otherwise healthy, and the other that men also otherwise healthy but having a low density of urine, are both liable to catheter fever. Commenting upon the former statement, you say—"Although not prepared to deny the possibility of a chronic form of fever, purely reflex in origin, as a result of catheterism, we cannot admit that it has yet been demonstrated to exist." Commenting on the second statement, you contend that in speaking of the cases in which this fever is liable to occur, I am referring to persons with prostatic enlargement and atony of the bladder, and that it is impossible to connect these two facts (the fever and the chronic urinary trouble) otherwise than by assuming that the patients were the subjects of slight interstitial changes in the kidney resulting from the malady in the bladder in the way familiar to surgeons.

With respect to your criticism of the first statement, I have to reply that, setting aside my own experience already given, several cases of this kind are recorded in the pages of Marx and Malherbe; that the most ardent advocates of the uræmic theory admit the existence of functional disturbance of the kidney as a sufficient cause of it; and that several authoritative observers in Germany—Rosenstein, Ebstein, Bartels, and others—declare that urinary fever may occur without any discernible structural alterations of the kidney.

I will content myself with two illustrations of these statements—the one from Malherbe, the most ardent advocate in France of the nephritic theory, and the other from Ebstein, who possesses an exceptionally large experience of urinary diseases:—

"It is admitted that there are in medical literature a certain number of contradictory cases. We give the most striking that we can find among them. In the greater part of these cases the integrity of the kidney can be explained by admitting that there has been a simple congestion thereof. Now, one knows that congestive states can disappear either after death or during the last hours of life. There is not here any difficulty. But what is more difficult to explain is that in certain cases (such as the one which we borrow from M. de Saint Germain, the patient had a certain number of febrile accessions, which, according to our theory, would imply a serious alteration of the kidney) it has been explicitly declared that these organs were absolutely healthy."—Malherbe: "De la Fièvre dans les Maladies des Voies Urinaires," page 64.

"The opinion has now and then been expressed that the fever which the French call uræmic fever always indicates that the kidney is involved, but this is an error."—Ebstein: "Ziemssen's Cyclopædia, vol. xv., page 572.

With respect to your criticism of the second statement, that it is impossible to connect chronic bladder trouble with catheter fever, except through the mediation of interstitial nephritis, I am bound to express dissent and to say that the connexion is unproved, inapplicable to recent, and only partially applicable to old-standing, cases, contrary to existing evidence, and insufficient to account for the character, course, and sometimes fatal issue of the fever. This criticism is plainly grounded on an almost exclusive experience of hospital cases, and even of them it can be shown that it is only in part correct. For in forty cases taken by Malherbe from the post-mortem register of M. Guyon at the Neckar Hospital, perfectly defined indications of renal disease were found in only half the number, and of this half some were mere congestions. Even of the cases extracted by Mr. Berkeley Hill from the Pathological Register of University College there were two in which no mention was made of renal disease.

Nor is this all, for in some points of cardinal importance hospital cases are totally different from private ones; what is true of the one may be quite untrue of the other, and one cannot justly reason from both as if they were the same. The poor man seldom lands in the hospital till towards the close of his malady, but the rich one seeks the surgeon in his consulting-room at the beginning of it; and whilst autopsies are common in hospitals, they are rare in private houses.

But furthermore, assuming for argument's sake that in all the cases of catheter fever following upon early catheterism there exist interstitial nephritic changes insufficient to produce alterations in the kidney visible to the unaided sight, can it be fairly argued that they are adequate to account for death? and if not, what are the new factors which intervene?

In the discussion which followed the reading of my address at the Medical Society I contended that there were several factors engaged in the evolution of urinary fever; but as the substance of my contention is embodied in the fourth proposition as it is printed in your issue of the 22nd ult., I will not waste your space by repeating it here.

Lastly, as I have stated in the body of my address, the assemblage and progression of symptoms in catheter fever do not closely resemble those of acute or of chronic uræmia; nor does the urine in the course of the fever exhibit those changes of constitution which are commonly associated with progressive interstitial nephritis.

In the course of your very able and exhaustive criticism you have advanced one or two other objections to my views, not entirely covered by what has just been said; but their secondary importance, my absence from books of reference, and especially the length to which this letter has run, forbid me from seeking on this occasion to trespass further on your patience.

At the close of your article you say that my remarks at the Clinical Society were of a nature to excite distrust of both surgeons and surgery. Assuredly I had no such intention; and the very thought that my words on that occasion were capable of such an interpretation has caused me the deepest concern. For I can say with literal fidelity to long-

formed convictions, that I have the greatest admiration of British surgery, and hold in the highest respect the abilities, achievements, and character of British surgeons.

I am, Sir, your faithful servant,

ANDREW CLARK, M.D.

Cavendish-square, W., January, 1884.

To the Editor of THE LANCET.

SIR,—In his closure of the discussion on his paper on "Catheter Fever," which Sir Andrew Clark read to the Medical Society on December 17th, that gentleman animadverted strongly upon a remark which fell from me. The objection raised against my criticism seemed to me so inapplicable that I felt sure that my meaning had been misapprehended by Sir A. Clark. Moreover, the report of my speech, which you have done me the honour to insert in your columns, is too condensed for those who may have read it to perceive where I had failed to make myself clear to the author of the paper. Under these circumstances I shall be glad to be allowed to point out that what I did say on that occasion was not refuted by the arguments used for the purpose.

Sir A. Clark commenced his discourse upon the various conditions which occasionally follow the instrumentation of the urethra, by narrating two cases from his own experience where death had followed the use of the catheter for relief of partial prostatic retention. A post-mortem examination was made in one of these cases, and while the prostate was found enlarged and the bladder extensively diseased, the kidneys were sound.

Before the President invited me to speak Sir Henry Thompson had re-established the distinctions, which the paper had not kept in prominence, between the several varieties of disturbance which might follow the use of a catheter; and in speaking of the insidious low form of fever, Sir Henry could not recall an instance where, death having followed, healthy kidneys were found. When I rose to speak I began by carefully limiting the scope of my remarks to this particular form of low fever, of which the author of the paper had described two cases. In doing this, I expressed my surprise that in Sir A. Clark's case no disease had been detected in the kidneys, when the bladder had obviously been long hindered in its function and altered in its structure, absence of change of structure being in such cases contrary to my experience. To support this I adduced the statistics of University College Hospital, where of fifty-nine cases of enlarged prostate thirteen had died. In eleven of the fatal cases there was present interstitial nephritis; in the remaining two death was owing to bronchitis, the condition of the kidneys being not stated. To this strong proof of the constant presence of renal disease with the low insidious form of urinary fever, Sir Andrew Clark somewhat vehemently brought two objections—one, that my statistics, being based solely on hospital experience, were no true *exposé* of the disease when occurring in private practice. The other objection was that my remarks showed ignorance of the recorded experience of surgeons who have published cases of death after the use of the catheter in patients whose kidneys were found to be quite healthy. Respecting my quotation of hospital cases, I may be allowed to point out that, except his own single instance, all the cases quoted by the author were hospital cases; consequently the source of my statistics did not render them incomparable with those collected from Velpeau, Marx, and Malherbe, though of course the objection lies against their comparison with Sir A. Clark's single case. But in answering his second objection, that my remarks showed ignorance of the literature of the subject, I reply that in not one of these three authors, whom he brought forward with much emphasis, is recorded a fatal case of fever of the low insidious kind where the kidneys were found post mortem to be healthy. All the examples of healthy kidney adduced occurred in cases of death by shock, or as the consequence of the sharp paroxysmal form of "catheter fever."

Such being the real significance of the evidence brought to assail my position, I trust that I may be excused for still maintaining that interstitial nephritis in the chronic form, or with the acute form superadded to it, is constantly found in kidneys where the low insidious form of "catheter" fever is excited, and that we have in the case now reported by Sir A. Clark the first instance where this has not been so. Whether kidney disease is always present when death follows the use of the catheter is another question, and one which I did not touch.

I am, Sir, yours, &c.,

Dec. 1883. BERKELEY HILL.

CHOLERA AND WATER-SUPPLY IN INDIA.

To the Editor of THE LANCET.

SIR,—In the review of my paper on the "Sanitary State of the British Troops in Northern India," which appeared in THE LANCET of December 22nd, the writer, after referring to the extraordinary fluctuations which occur in the death-rate of the troops, goes on to say: "He [the author] has certainly failed to explain why such remarkable fluctuations should take place while the character of the water-supply remains unchanged, if the latter be, as he asserts, the cause of those terrible epidemics of cholera from which the British troops suffer." The answer to this objection is very easy. The water-supply does not remain unchanged. On the contrary, it is in a state of constant change. In stations like Peshawur, where the water-supply was taken from open gutters flowing along the sides of the roads and fifty-two miles in aggregate length, the character of the water changed from day to day, or even from hour to hour. A fall of rain, or the burial of a corpse at the edge of the cut before it enters the cantonment in one of the numerous burial-places in that locality, essentially changed the quality of the water. Peshawur is no doubt an extreme case, but from the descriptions given in my paper of the physical surroundings of the water-supply in other stations, it must be obvious that its character is liable to be affected in a great variety of ways. So long as things remain in their present state, any contagia that may be current in a station are pretty sure sooner or later to gain admission to the water-supply, and, if communicable through that medium, to be extended to the British troops. The fluctuations in the death-rate of the troops depend mainly on two factors:—(1) The prevalence of cholera among the native population; (2) the facilities afforded for the contamination of the water-supply. The cases of Fort William and Nagpur given in the paper show that when the water-supply is safe the troops run very little risk of contracting cholera, however prevalent the disease may be among the native population.

I am, Sir, your obedient servant,

A. C. C. DE RENZY, Surgeon-General.

Bray, Ireland, Jan. 1st, 1884.

*** As the "constant changes" referred to do not seem to be in the direction of an uncontaminated water-supply, we fail to see how they can account for the almost complete exemption from cholera in certain years.—ED. L.

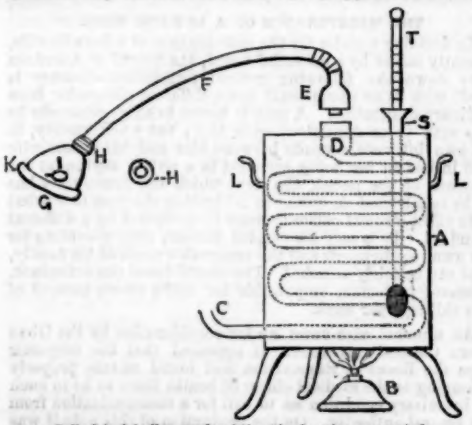
ANTISEPTIC INHALATION.

To the Editor of THE LANCET.

SIR,—In the present state of our knowledge of the bacilli of tubercle and of the action or inaction of antiseptic inhalations, I believe all observations are of value to the profession. I therefore venture to send you a few lines recording my experience of the action of antiseptic inhalations as ordinarily used, from observations taken, thanks to the kindness of my colleagues here, Dr. Daubeny and Dr. Freeman, in typical cases under their care, as well as under my own care, and also a few lines descriptive of the results of experiments I have made on the vaporisation of carbolic acid and a description and drawing of an apparatus I have had constructed by means of which I believe carbolic acid and other disinfectants may be much more thoroughly vaporised and inhaled than by any ordinary method.

During last winter I examined constantly the sputa of patients under the care of Drs. Daubeny, Freeman, and myself, in which the bacilli had been demonstrated, and I was much struck with the fact that in the great majority of cases where carbolic inhalations were used with an oro-nasal inhaler in sufficient quantity, a great diminution in the number of bacilli took place; and that, though from time to time fresh crops appeared, these, when the inhalations were continued, regularly but gradually diminished

both in frequency of occurrence and in the relative number of bacilli. But I was also struck with the difficulty in persuading patients to inhale efficiently—i.e., to apply the inhaler so as to exclude all uncarbolised air, and in many cases also they did not at first inhale freely, and the carbolic acid, being not very readily vaporised, is not taken up from an ordinary inhaler unless the respirations are fairly deep and strong. I therefore considered, How can carbolic acid be effectually vaporised? And during the summer months made the following experiments with the kind assistance of Mr. Gurnell, the well-known chemist at Ryde. I exposed fifteen minims of carbolic acid to the air of an ordinary room in a watch glass; at the end of twenty-four hours the weight was not perceptibly altered. Next I exposed fifteen minims in a watch-glass to a heat kept as nearly as possible to 170° F. in a water oven; the result being that at the expiration of five hours, during which the temperature had never exceeded 170° or been below 150°, no trace of carbolic acid could be found in the watch-glass. Next I tried with a temperature ranging from 200° to 212° F., and found my carbolic had entirely disappeared in two



A, Cylindrical boiler, made of tin, 8 in. by 6 in., supported by three legs, closed except at S, over a spirit-lamp (B). C, The afferent end of the air tube, which enters the boiler at the side and is coiled round within it, 90 in. of metal tubing having an internal diameter of ¼ in. being disposed in the cylinder. D, The efferent extremity of the tube, ending in a small cylindrical expansion, which receives the hollow plug (E), having an internal diameter of 1½ in. and a depth of 1 in., in which the dry tow to receive the antiseptic substance is placed, and which is connected with the mouthpiece (G) by an indiarubber tube (F), having an internal diameter of ¾ in. and a length of 18 in. G, The mouthpiece, with three valves. I, A small one on each side to give exit to the expired air. H, A larger one to admit the heated antiseptic air and prevent the return of expired air. K, An india-rubber air-pad round the mouthpiece, which covers both nose and mouth. LL, Handles for lifting the cylinder. S, A small funnel, through which the boiler (A) is filled and the thermometer (T) introduced. (The drawing is one-tenth the actual size of the apparatus.)

hours. My next idea was to pass all the air inspired (1) through eight or nine feet of metal tubing heated to any temperature required, (2) through the carbolic acid also heated, and (3) through a proper oro-nasal mouthpiece. For this purpose I had an instrument constructed consisting of nine feet of metal tubing coiled inside a tin boiler, the afferent end being open to the air and the efferent expanded into a small chamber, closed by a hollow plug of metal, in the interior of which tow could be placed to receive the carbolic or other disinfectant, and which was connected with an ordinary oro-nasal mouthpiece properly padded by a large indiarubber tube. I then placed 13 grs. of carbolic acid on 8 grs. of dry tow, making a total weight of 21 grs., and placed this in the hollow plug. After ten minutes' inhalation the total weight was reduced to 13 grs.; after twenty minutes, including the time occupied with the first weighing, to 8 grs. +, after thirty minutes to 8 grs. −, showing, as I believe, that the total amount of carbolic acid was completely vaporised in about twenty minutes, and from my sensations, of tingling lips, sore nose and throat, pain in the chest, and slight vertigo, with exhilaration of spirits, I believe faster than desirable for ordinary inhalation. The temperature of the water in the boiler ranges from 170° at the commencement to 198° F. at the termination; a slightly lower temperature causes the vaporisation of the carbolic to be more gradual, and I venture to claim for this system that by it carbolic acid and many other antiseptics can be perfectly vaporised in hot dry air, the heat and dryness being of themselves beneficial, and that the apparatus can be used at the patient's own home, and is not expensive. Mine, made by a working tinsmith, cost less than one pound.

I remain, Sir, yours faithfully,

LIONEL E. KAY SHUTTLEWORTH.

San Remo, Italy, Oct. 19th, 1883.

"MODES OF DEATH IN THE EXECUTION OF ENGLISH CRIMINALS."

To the Editor of THE LANCET.

SIR,—As Dr. Richardson, Dr. Wynter, and myself have happily escaped hanging up to the present, it is possible that any one of us may be just a little out as to the sensations experienced in that mode of execution; but I confess that on purely theoretical grounds I am disposed to concur with Dr. Wynter rather than with Dr. Richardson.

Dr. Richardson manifests a laudable desire that when a man is to be "done to death" in the name of the law, this should be accomplished in a strictly legal manner; and his conscience is evidently much exercised by the thought that in some instances it is not so. In giving between inverted commas as a part of the sentence "shall hang by the neck until dead," he is a little out. The words he means to quote are "shall be hung by the neck until dead." However, this does not much matter. His mistake as to the meaning of the portion of the sentence to which he refers is much more important. The intention of the Legislature was not to prescribe that the immediate cause of death must necessarily be "asphyxia" or "a shock inflicted on the spinal cord below the medulla." It was that the hanging is to be continued "until dead;" the whole force of the sentence is in these last two words. Their omission would result in the defeat of the sentence in many cases, because if they had been omitted it would not be in the power of any executioner or of his master, the sheriff, to suspend a man a second time in case of any accident to the rope, whereby the culprit once came to the ground, or alighted on any part of the scaffolding harmless after he had been suspended. In such a case the sentence would have been fully carried out by his having been "hanged by the neck," and the person would be guilty of legal murder who dared to hang him a second time. Think of the bribes that in numerous instances would be offered to hangmen in order to ensure such an accident if the Legislature had not inserted the words "until dead"! It could be done by a slight knack of the loop. With great respect for Dr. Richardson's legal erudition, I think this disposes of several paragraphs of the seven of which his "note" is composed.

Dr. Richardson thinks that the Legislature meant that a culprit condemned to death should die from asphyxia, and hence in his anxiety that if capital punishment is to be inflicted it should be in a legal manner, he is against any mode of hanging that does not ensure asphyxia. But in his letter there are these two sentences:—"The real danger connected with the lethal death from asphyxia is from quite another kind and is not generally known. The danger is that of sometimes burying the culprit alive in the process of interring him immediately after he is cut down." It appears to me that here Dr. Richardson has placed himself in this logical dilemma: according to him a man ought to be asphyxiated in order to ensure his death by hanging, but if he is asphyxiated there is a great chance of his being buried alive! Dr. Richardson is an able man, and I only point this out to show in what absurdities we may be landed by over-refinement in matters of this kind. The policy of capital punishment is quite another question; but as long as our law continues to say that those who are to die under it "shall be hung by the neck until dead," the only object of humane men should be to have death ensue as speedily as possible after the culprit has been suspended, and I concur with Dr. Wynter in thinking, for surgical reasons, that this is best secured by the "long drop."

I remain, Sir, yours truly,

A. B. KELLY, M.R.C.S., &c.

Park-street, W., Dec. 1883.

"THE BOWER AND KEATES CASE."

To the Editor of THE LANCET.

SIR,—Nothing has pleased me so much as the hearty and able way in which you have taken up the case of Messrs. Bower and Keates. I only hope that the profession as a whole will appreciate and second your efforts as they deserve to be. What a powerful and irresistible body of men the profession would be if on all occasions like the present one there was an earnest and united action. Let the subscription lists be long—no matter how small each subscription may be—and let Messrs. Bower and Keates feel that in this affair they have not only the pecuniary aid, but also the hearty sympathy, of their brethren. It will then be a lasting and ineffaceable testimony to the power, in the medical profession, for united action. This would, perhaps, have more effect in preventing the Public Prosecutor acting precipitately than any amount of talking.

I am, Sir, yours obediently,

JOHN H. RUSSELL, M.R.C.S., &c.

Waltham Cross, Herts, Dec. 24th, 1883.

SCOTTISH NOTES.

(From our own Correspondent.)

HEALTH LECTURES IN SCOTLAND.

POPULAR lectures on health subjects have now become so well established in Scotland that during the present winter there is scarcely a town of any consequence which does not boast of some effort in this direction, either by means of a regular course given by the lecturers under the Combe Trustees, or through the activity of local members of the profession. Both methods are very popular, as far as drawing audiences can be assumed as an evidence of success; but, as might be expected, the courses arranged to be delivered in several towns are of a more general character, and fail to arouse the separate localities to a sense of their own shortcomings in sanitary matters. On the other hand, when practitioners lecture in their own towns they know what is specially needed, and hit the nail on the head with more certainty and effect. We have recently had several instances which prove the value of local discussion of hygienic grievances, and it may not be invidious specially to make mention of one or two of the Edinburgh lecturers and of Dr. Anderson at Dundee. The Combe Trustees are most fortunate in their choice of lecturers, as will be understood when it is mentioned that they have this year Professors McKendrick, Struthers, and Stirling more or less engaged; but it would add largely to the good work done by this public-spirited body if they could secure the services of a capable local practitioner in the various centres now only dealt with generally. Their patronage would add weight to the local committee, and pecuniary assistance is needed in all but the largest towns, if well illustrated addresses or demonstrations are to be given. The spirit abroad at present deserves to be nurtured, and variety of food is as necessary in this case as in others. If a moderate collection of sanitary appliances could be secured for the use of the several lecturers, householders would by-and-by be enabled to protect themselves against the terrible ills which now on all sides threaten them.

OVER-PRESSURE IN SCHOOL WORK.

It is satisfactory to note that the question of overwork in the education of children receives increasing attention at the hands of School Boards throughout the country; and that there becomes more evident, as the matter is more fully discussed, a desire to take moderate views both as to the extent of the evil and the remedies to be applied. Home lessons are more and more blamed as occupying an undue amount of the time and energy of the children, and Boards are looking about for a means of relief from this infliction. I notice what appears a sensible proposal made at the Moffat Board a few days ago, when it was suggested that an hour per day of school time should be devoted to work now done at home. By this means the evenings would be relieved, and the direction of the work being undertaken by the teachers instead of the parents, all children would alike benefit by the supervision. It would be a vast improvement on the present system if the children of those unable or unwilling to aid in home work were relieved of the prolonged nightly struggle which is so often the proverbial "last straw."

SCIENTIFIC OBSERVATIONS ON DEEP-SEA FISHING.

It has been arranged by H.M. Trawling Commissioners that Professor McIntosh of St. Andrews will proceed systematically at intervals (probably once a fortnight) to the trawling grounds on the east coast of Scotland—between Aberdeen and Berwick—for the next six months, and undertake certain investigations tabulated in his instructions concerning the trawling grounds and their inhabitants and surroundings. Each cruise will, in all probability, occupy about two days. The new steam trawler *Wallace*, which is fitted with all the most recent appliances used in such work, will, weather permitting, pick up and land Professor McIntosh at St. Andrews or elsewhere in rough weather. These investigations will commence immediately. From Professor McIntosh's well-known enthusiasm, and the fact that cognate subjects have formed the study of his life, we may anticipate such success as is possible under the circumstances.

THE MAINTENANCE OF A LUNATIC WIFE.

In deciding a claim for the maintenance of a lunatic wife, recently raised by a parochial board, the Sheriff of Aberdeen lays down the following general principles:—Lunacy is dealt with as an exceptional thing, different altogether from ordinary destitution. A man is bound to share whatever he has with those dependent upon him; but when society, in its own interests, steps in between him and his insane wife and insists on her being secluded in a public asylum at the expense of the parish, the right which the community has to be reimbursed its outlay in mitigating the results of what is in effect a social calamity must be measured by a different standard. It is only his surplus income, after providing for his own requirements and the reasonable needs of his family, that can be fairly attacked. The sheriff found the defendant, a coast-guardsman, responsible for half a crown instead of five shillings per week.

An unusual case came up for consideration by the Oban Town Council last week. It appeared that the inspector from the Board of Supervision had found certain property belonging to the medical officer of health there to be in such an insanitary condition as to call for a communication from the central authority. On the production of this note it was at once moved that the officer be dismissed; but after a lengthened discussion the motion was lost by the casting vote of the chairman. Oban, an established summer resort, is struggling into existence as a corporation, and in assuming new and enlarged functions much friction and local irritation have arisen.

IRELAND.

(From our own Correspondent.)

THE many friends of Surgeon H. Gray Croly, of Dublin, will be gratified to learn that he has perfectly recovered from the serious illness from which he recently suffered.

BELFAST HOSPITAL SUNDAY.

Collections were made some weeks ago on behalf of the Hospital Sunday Fund in several of the churches in the Belfast district, and on last Sunday collections for the same purpose were made in eight other churches. In 1882 fifty-eight churches joined in the movement, and a sum of £547 was obtained for the funds of the Belfast Royal Hospital, the only institution which receives the sums collected.

ELECTION OF A CORONER FOR THE NORTHERN DIVISION OF THE COUNTY DOWN.

In consequence of the death of Mr. Gardner, a vacancy arose for a coroner for the northern division of the County Down. At the last election 2533 votes were polled out of a constituency of 8296, and Mr. Gardner was unsuccessfully opposed by Dr. James Irvine. The polling took place on the last day of the year now gone, and the appointment was contested by three candidates—viz., Mr. Russell, a solicitor, and two medical practitioners: Dr. James Carlisle, of Crossgar, and Dr. R. C. Parke, of Newtownards. Canvassing has been most vigorously prosecuted on behalf of the various candidates during the last few weeks, and a great deal of interest has been exhibited as to the result of the

election for the appointment, which is worth about £175 per annum. Special trains were chartered, with cars and vehicles of all kinds, and a greater stir could not have been made if the occasion were the returning of a member to Parliament. At the close of the poll upon last Monday the numbers were found to be as follows:—Dr. Parke, 1534; Dr. Carlisle, 1036; Mr. Russell, 900.

HYGIENE IN NATIONAL SCHOOLS.

At the National Teachers' Congress, held last week, a paper on this subject, prepared by Dr. Cameron of Dublin, was read to the Congress. In the course of his communication Dr. Cameron said that the character of the buildings in which people dwell was one of the many factors affecting their moral, physical, and intellectual condition. It was gratifying to think that the question of the deplorable condition of the homes of the people was at last receiving something more than mere sentimental attention; and he trusted that the day was not far distant when the reproach that the Irish peasantry were the worst housed in Europe would be wiped out. He wished to bring under public notice the defective state of a large portion of the Irish National School buildings, and also of the teachers' residences. In the report of the Commissioners of National Education for 1882 the condition of 7302 schools was briefly stated. Of the school-houses, 4805 were reported to be "good," 1620 "middling," and 577 "bad." Of out-premises and playgrounds, there were none in connexion with 1607 schools; and with respect to sanitary accommodation, it will hardly be credited that there were no less than 1704 schools without a single water-closet. As regards his own observations of the national schools, he had rarely seen one strictly constructed upon the principles of hygiene and comfort, and, taken as a whole, they were mean, ill-conditioned buildings, quite unworthy to be used in connexion with one of the noblest of man's works—the cultivation of the human understanding. In many schools the square space, on days of maximum attendance of pupils, was only 3 feet, and the air space less than 25 cubic feet. Such a confined and tainted atmosphere endangered the health of both teacher and pupil. In conclusion, Dr. Cameron insisted that all the schools should be regularly inspected by public officers, the same as workshops and factories, and considered that among Her Majesty's inspectors of schools there should be a few medical inspectors.

POST-MORTEM EXAMINATIONS IN PRISONS.

A circular has been issued to the governor of each convict and local prison by the General Prisons Board, informing them that in the case of an inquest being held as to the cause of death of an inmate in a prison, it was the desire of his Excellency the Lord-Lieutenant that, in the event of a post-mortem examination being ordered by the coroner, such examination shall not be held by the medical officer of the prison, but by an independent medical authority. At a recent execution in Dublin the coroner, Dr. Whyte, was informed of this circular, but he declined to recognise an arrangement which contravened the Act of Parliament bearing on the subject, and called on the two medical officers connected with the prison to perform the necessary examination. The Capital Punishment Amendment Act, 1868 (31 Vic., cap 24, sec. 4), states: "As soon as may be after judgment of death has been executed on the offender, the surgeon of the person shall examine the body of the offender, and shall ascertain the fact of death, and shall sign a certificate thereof, and deliver the same to the sheriff."

A meeting of the Fellows of the Royal College of Surgeons takes place this week, to witness the election of a Professor of Dental Surgery.

An election for a Coroner to the Coleraine district took place in the Court-house, Coleraine, last Monday. The candidates were Drs. Alexander Caldwell and Alexander Lane, the former being successful.

Dublin, Jan. 1st, 1884.

THE salary of Mr. C. St. John Wright, M.B., C.M. Aber., Medical Officer of the St. John's-road Infirmary, Islington, has been increased by £25 per annum.

THE danger attending the escape of illuminating gas was illustrated at Glossop last week. Four persons were found dead in bed one morning in a room into which an escape of the carburetted hydrogen had taken place.

THE ROGERS TESTIMONIAL.

To the Editor of THE LANCET.

SIR,—Will you kindly insert the enclosed ninth list of subscriptions in this week's LANCET, and oblige, yours truly,

J. WICKHAM BARNES.

Poor-law Medical Officers' Association, 3, Bolt-court, Fleet-street, London, Dec. 26th, 1883.

Dr. Eyton Jones, Wrexham ...	£1	1	0
Dr. A. Leachman, Petersfield ...	1	1	0
Dr. J. Harris Ross, Brighton ...	1	1	0
Dr. Grime, Blackburn	1	0	0
Daniel Iles, Esq., Fairford	0	10	6
B. Powne, Esq., Chard	0	10	6
F. J. Flower, Esq., Warminster	0	10	0
George Hepworth, Esq., Gloucester ...	0	10	0
Dr. A. Robertson, Town Hospital, Glasgow	0	10	0
Dr. Hugh McLean, Corbridge	0	10	0
W. Powell, Esq., Cheltenham	0	10	0
A. T. Moore, Esq., Reading	0	10	0
E. R. Denton, Esq., Leicester	0	5	0
M. R. Behrendt, Esq., Barringham ...	0	5	0
Dr. B. Laverick, Staithes	0	5	0
Ignotus	0	5	0
J. W. Wolfenden, Esq., Tutbury	0	5	0
John Russell, Esq., Neath	0	5	0
Geo. W. Rhodes, Esq., Huddersfield ...	0	5	0
Dr. Thos. Fuller, New Shoreham	0	5	0
Dr. Nathan Hannah, Ashton-in-Makerfield	0	5	0
John Clare, Esq., Hanley	0	5	0
Per THE LANCET:—			
An Admirer of Disinterested Work ...	£5	0	0

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed the examination in the Science and Practice of Medicine, and received certificates to practise, on Dec. 27th:—

Bennett, Edwin Alfred, Cornwall-road, Bayswater.
Dent, Herbert Crowley, Wood-street, Woolwich.
Frames, Alfred, Cromwell, Belsize Park.
Hudson, Charles Leopold, Bungay, Suffolk.
Lawrence, Laurie Asher, Belsize-avenue.
Lewis, Edward John, Great Coram-street.
Rugg, George Lewis, Stockwell Villa, Clapham-road.
Wetwan, William Albert, Tavistock-place.

The following gentlemen also on the same day passed the Primary Professional Examination:—

George Douglas Hunter, St. George's Hospital; Edwin Charles Tatam, King's College.

LIFE ASSURANCE PRIMER.—Forty-one essays have been sent in in competition for the prize for the best primer on life assurance, offered a few months ago by the Directors of the Briton Life Association.

BIRTHS AND DEATHS IN NEW SOUTH WALES.—In New South Wales the birth-rate continues largely in excess of the death-rate. In 1882 the number of births was 29,702, and of deaths 12,816.

THE Holmesdale Cottage Hospital is doing good work. The report read at the annual meeting at Sevenoaks a few days since represented the condition of the institution as in every way satisfactory.

THE HOSPITALS ASSOCIATION. — The inaugural meeting of this Association will be held, by permission of the Lord Mayor, at the Mansion House on Friday, February 1st, at three o'clock. His Lordship will preside.

TESTIMONIALS.—At the meeting of the Vestry of St. George-in-the-East on the 20th ult., Dr. Rygate, the medical officer of health, was presented, on his retirement from the post after seventeen years' service, with a testimonial in the shape of a resolution, acknowledging the value of his services, handsomely engrossed on vellum and framed.—The members of the Tunbridge Wells and District Equitable Benefit Society have presented Dr. Stamford with an illuminated scroll "as a slight recognition of his valuable services for the period in which he discharged the duties of medical officer to the above Society."

DEATHS FROM GLUTTONY.—Two of these cases are reported. The first is that of a railway clerk, who appeared well when he went to bed on Christmas night, but died before morning. The medical man who examined the body found the stomach largely distended with undigested food which had stopped the action of the heart. The other case was that of a negro from Sierra Leone, in whose stomach whole potatoes were found.

SIR FREDERICK BRAMWELL'S plans for an improved outfall for the sewage of Portsmouth, and for the removal of certain defects in the sewers, were submitted to and discussed by the Town Council on the 27th ult. Approval of these was expressed; and it was decided that they should be submitted to the Admiralty and War Departments, and also to the Local Government Board, and that application be made for sanction to borrow £124 000.

UNIVERSITY COLLEGE, DUNDEE.—The second annual meeting of the governors of this institution was held recently, when a report of the work done during the year was read. The chief points of interest have already been mentioned in this journal, but it now appears that 345 students are attending classes, of whom 107 are day students. Already sums of £500 and £2000 have been handed over to the directors for the foundation of a bursary and scholarship, and the report impresses upon the wealthy citizens of Dundee the necessity of providing for further chairs.

LIFE-BOAT SERVICES IN 1883.—The list of the services of the life-boats of the Royal National Life-boat Institution during the past year shows that they resulted in the saving of 726 lives. In addition, however, the institution, during the year, granted rewards for rescuing 230 lives by means of shore-boats and fishing-boats, so that a total of 956 lives have been saved through its operation in the last twelve months; since its formation it has contributed to the saving of 29,628 lives. The committee appeal for increased and sustained support.

ST. JOHN AMBULANCE ASSOCIATION.—A meeting was held on November 28th, at Bombay, to further the objects of the recently established centre. The Governor, Sir James Ferguson, presided, and was supported by many of the leading European, medical, and native residents. It was stated that Princess Christian's translation of Professor Esmarch's lectures had been re-translated into Maharati for the use of the native police; and the extension of the movement, by dividing the city into districts, was warmly advocated.

NEW BOROUGH HOSPITAL AT WOLVERHAMPTON. The foundation-stone of this building, for the reception of patients suffering from infectious diseases, was laid on the 28th ult. When completed it will consist of six blocks, four to be used as hospitals proper, one for the administrative department, and one for disinfecting purposes and offices. The total cost will be about £8000, but only one section is to be completed at present, to provide accommodation for twelve patients.

THE SANITARY ACT, 1866.—The Local Government Board, by notice in the *London Gazette*, have declared the enactment contained in section 35 of the Sanitary Act, 1866, to be in force within the following parishes and districts of the metropolis—viz., the parishes of St. Marylebone, St. Pancras, St. George (Hanover-square), Paddington, St. Mary (Newington, Surrey), Camberwell, St. James and St. John (Clerkenwell), Bermondsey, St. Martin-in-the-Fields, and St. John (Hampstead); and the districts of Greenwich, Wandsworth, Holborn, Fulham, St. Saviour's, Plumstead, and Lewisham.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning at the latest.*

ANDERSON, WM. H., M.B., C.M.Glas., has been appointed Medical Officer for the Bessingfield District of the Hoxne Union.

ASHWORTH, J. HENRY, M.R.C.P.Ed., L.F.P.S.Glas., L.S.A.Lond., has been appointed Medical Officer for the First Division of the First District and the Workhouse of the Halstead Union, vice Hinds.

COOKE, JOHN, M.R.C.S., has been appointed Honorary Surgeon to the Alfred Hospital, Melbourne.

CREMEN, PATRICK JOHN, M.D.Q.U.I., M.R.C.S., has been elected Superintendent Medical Officer of Health for the City of Cork.

DESHON, FRED. PETER, M.R.C.S., has been appointed Medical Superintendent to the Metropolitan Lunatic Asylum, Kew, Victoria.

ELGOOD, CHARLES R., M.B.Lond., has been appointed House-Surgeon to the North-Eastern Hospital for Children, Hackney-road, E.

ELLIOTT, W. T., L.D.S.Edin. & Dub., F.C.S., has been appointed House-Surgeon to the Dental Hospital, Birmingham.

FOSTER, WILLIAM, F.C.S., has been reappointed Public Analyst for the Borough of Monmouth.

GOLDSBRO, CHAS. FIELD, M.D., F.R.C.P.Ed., M.R.C.S., has been appointed Medical Superintendent to the Lock Hospital, Auckland, N.Z.

HARVEY, WILLIAM, F.R.C.S.Eng., L.S.A.Lond., has been appointed Medical Officer of Health for the Dawlish and Wolborough Urban and the Newton Abbott Rural Sanitary Districts, combined, vice Armstrong, resigned.

HOLYOAKE, RALPH, M.R.C.S., has been appointed House-Surgeon to the London Hospital.

HUDSON, ERNEST, M.R.C.S., has been appointed Junior House-Surgeon to the Royal London Ophthalmic Hospital, Moorfields, vice J. B. Lawford, M.D., promoted.

JOHNSTON, ROBERT HENRY, B.A., M.B., B.Ch., has been appointed Medical Officer for the Bungay District of the Wangford Union; also for the No. 4 District of the Loddon and Clavering Union.

KNAPTON, GEORGE, L.R.C.P.Ed., has been appointed Medical Officer to the Operative Bricklayers' Society, Southampton, vice S. H. Hobley, L.R.C.P.Lond. &c., resigned.

MADDEVER, JOHN COOMBE, M.D.Glas., has been appointed Medical Officer of Health for the Brownhills Urban Sanitary District, vice Flinn, resigned.

MILLS, WILTON, L.R.C.P., L.R.C.S. (late House-Surgeon, Royal Infirmary, Manchester, has been elected Resident Medical Officer to the Chorlton-on-Medlock Dispensary, vice Mr. R. T. Dearden, resigned.

MONEY, ANGEL, M.D., M.R.C.P., has been appointed Assistant-Physician to the Victoria-park Hospital for Diseases of the Chest.

MOORE, CHARLES ARTHUR, M.D.Aber., M.R.C.S., L.S.A.Lond., has been reappointed Medical Officer of Health for the Barrow-on-Soar, Billesdon, Blaby, Hinckley, Lutterworth, Market-Bosworth, Oakham, and Uppingham Rural Sanitary Districts, and the Melton Mowbray and Thurmaston Urban Sanitary Districts, combined.

NANCE, H. CHESTER, M.R.C.S., L.R.C.P.Lond., L.S.A.Lond., has been appointed Junior Resident Medical Officer to the Hospital for Children, Pendlebury, Manchester.

REID, DONALD, M.B., M.S.Aber., has been appointed Medical Officer for the Wiggenhall District of the Downham Union.

SHEILD, A. MARMADUKE, M.B., F.R.C.S., has been appointed Resident Obstetric Assistant to St. George's Hospital, vice H. Fuller, M.B., resigned.

STOCKER, CHAS. J., L.R.C.P. Lond., has been appointed Surgeon to the St. Nicholas' Industrial Schools, Manor House, Little Ilford, vice — Best, M.R.C.S., L.S.A.Lond., resigned.

STURT, Mr. CLIFTON, has been appointed House-Apothecary (sole Resident Medical Officer) to the Bridgwater Infirmary.

THOMAS, ALFRED, L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Assistant Medical Officer to the Walton Workhouse, Liverpool, vice Rowland Owen, L.R.C.S.Ed., L.R.C.P.Ed., resigned.

WATSON, WILLIAM CHARLES, L.R.C.P.Ed., M.R.C.S., has been reappointed Medical Officer of Health for the Hoole Urban Sanitary District.

WILLIAMS, MONTAGUE, L.R.C.P.Lond., M.R.C.S., has been appointed Registrar and Pathologist to the North Eastern Hospital for Children, vice Trevor, resigned.

Births and Deaths.

BIRTHS.

BARNES.—On the 26th ult., at Portland-square, Carlisle, the wife of Henry Barnes, M.D., of a daughter.

BEVERIDGE.—On the 26th ult., at Dart Villa, Totnes, the wife of H. T. S. Beveridge, M.D.Edin., Staff Surgeon, Royal Navy, of a son.

FOURACRE.—On the 26th ult., at Tollington-park, N., the wife of R. P. Fouracre, M.R.C.S., of a son.

HEATH.—On the 22nd ult., at Gloucester-road, South Kensington, the wife of William Linton Heath, M.B., F.R.C.S., of a daughter.

STRUGNELL.—On the 28th ult., at Highgate-road, the wife of Fredk. W. Strugnell, L.R.C.P., M.R.C.S., of a son.

YARROW.—On the 28th ult., at Old-street, E.C., the wife of G. E. Yarrow, M.D., of a daughter.

DEATHS.

GAYLEARD.—On the 22nd ult., at his residence, Dane House, Holloway, Mr. John Gayleard, M.R.C.S., L.S.A., aged 74. Jamaica papers please copy.

HARDING.—On the 24th ult., after a short illness, at his residence, Eagle House, Hornsey, N., John Fosse Harding, F.R.C.S., aged 75.

LEES.—On the 27th ult., at Ashton-under-Lyne, Samuel Duncroft Lees, M.D. and J.P. of the County of Lancaster, aged 70.

N B—A fee of 2s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

Monday, Jan. 7.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M. and on Thursday at the same hour.
MEDICAL SOCIETY OF LONDON.—8.30 P.M. First Lettsomian Lecture: Mr. R. Brudenell Carter, "On Modern Operations for Cataract."

Tuesday, Jan. 8.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour. Ophthalmic Operations on Mondays at 1.30 P.M., and Thursdays at 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ROYAL INSTITUTION.—3 P.M. Professor Dewar, "On Alchemy in relation to Modern Science."
ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—8 P.M. Mr. H. H. Johnston, "On the Ethnology of the Congo and South Western Africa."
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Mr. Fred. Treves, "On the Direct Treatment of Spinal Caries by Operation."—Dr. Radcliffe Crocker, "On Three Cases of Xeroderma Pigmentum (Kaposi).

Wednesday, Jan. 9.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.—Ophthalmic Operations on Tuesdays and Thursdays, at 1.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.—Skin Department: 9.30 A.M., on Tuesdays and Fridays.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations 2½ P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department: 1.45 P.M., and on Saturday at 9.15 A.M.
EPIDEMIOLOGICAL SOCIETY OF LONDON.—7.30 P.M. Council Meeting.—8 P.M. Surgeon-General Hunter, "On the Origin of the Cholera Epidemic of 1883 in Egypt."
HUNTERIAN SOCIETY.—7 P.M. Council.—8 P.M. Mr. Reeves, "On the Treatment of Rectal Stricture, with special reference to Inguinal Colotomy."—Mr. Charters J. Symonds, "On the Reliable Signs of Fracture of the Neck of the Femur."
ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Ordinary Meeting.
OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown.—Dr. E. S. Tait, "On Observations of Puerperal Temperature."—Dr. J. Williams, "On the Corroding Ulcer of the Os Uteri."

Thursday, Jan. 10.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.
NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.
OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—3 P.M. Living Specimens.—8.30 P.M. Discussion "On Sympathetic Ophthalmitis" (adjourned from last meeting).—Mr. Simeon Snell, "On Two Cases of Retinal Glioma, in one of which Shrinking of the Eyeball occurred without Perforation."—Dr. G. A. Brown, "On a Case of severe Conjunctivitis, with Formation of Membrane on the Cornea, caused by Whisky thrown in the Eyes."—Mr. Henry Eales, "On complete Paralysis of Convergence and Accommodation in a Girl aged thirteen."—Mr. J. B. Story, "On the Treatment of Cystoid Cicatrix."—Mr. A. Stanford Morton, "On Congenital Absence of Lacrymation in a Boy."—Mr. M. M'Hardy, "On some Clinical Observations which appear to indicate a means of reducing the Danger from Malignant Glaucoma while increasing the efficacy of Iridectomy in the Treatment of Chronic Glaucoma."

Friday, Jan. 11.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.
CLINICAL SOCIETY OF LONDON.—Annual General Meeting for Election of Officers and Council.—Dr. J. K. Fowler, "On a Case of Subcutaneous Nodules."—Dr. Coxwell, "On a Case of Cortical Tumour, with Unusual Frequency of Epileptiform Attacks."—Dr. R. J. Lee, "On a Second Case of Creeping Eruption."

Saturday, Jan. 12.

KING'S COLLEGE HOSPITAL.—Operations, 1 P.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 A.M. by Steward's Instruments.)

THE LANCET OFFICE, Jan. 3rd, 1884.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Dec. 28	30·32	S.E.	43	41	..	45	35	..	Overcast
,, 29	30·29	S.	40	40	..	42	39	..	Overcast
,, 30	30·31	E.	40	39	..	42	38	..	Overcast
,, 31	30·50	E.	37	35	..	41	35	..	Overcast
Jan. 1	30·35	E.	36	34	..	40	32	..	Overcast
,, 2	30·16	E.	39	39	..	40	34	..	Overcast
,, 3	29·97	S.W.	49	39	..	..	38	..	Raining

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe, or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

WHY DO THE FISHMONGERS KEEP UP THE PRICE OF FISH?

THIS is the question people are asking everywhere. We can only reply, "Because it suits their purpose." The average price of fish in the market is something under threepence a pound when it is landed, and not more than fourpence halfpenny in London, after the cost of carriage is defrayed. Making every allowance for selection, rent, &c., the retail trader is certainly not justified in charging a shilling a pound for most descriptions of fish, and two or three shillings for other kinds. The only remedy for the evil is to buy in the market until the retail traders come to their senses and act fairly by their customers.

An Indian Medical Officer.—We regret that, for many reasons, we cannot publish our correspondent's letter. He can scarcely be serious when he asks who are the members of the Army Sanitary Commission, and writes of them as an "anonymous body," seeing their names are regularly published in the Monthly Army List. We shall be happy to receive the forthcoming pamphlet to which he refers, as the subject treated of is one of very great importance.

"PSYCHICAL RESEARCH."

To the Editor of THE LANCET.

SIR,—A note in your number of Dec. 22nd so completely misrepresented—or rather, I should say, inverted—the meaning of the questions to which the Society for Psychical Research are inviting yes or no replies, that you will, I trust, allow me a word of explanation. A glance at the questions will show that they contain no reference whatever to "ghosts," "spectres," or "spiritual manifestations" of any sort. Their object is simply to ascertain the relative frequency of some perfectly well-recognised phenomena—of particular kinds of sensory illusion, and of a particular kind of vivid dream—which are so little "mysterious" in nature that they may fall to the lot of the sanest and healthiest of mankind. No doubt it occasionally happens that such a sensory illusion or vivid dream coincides in time with the occurrence of the actual event which it suggests; but these cases, so far from being (as your note represents) the only ones to which our questions were directed, were specially excluded from the census by a request that any account of them might be separately given—the very point being to discover the frequency of cases where there is no coincidence, and no excuse for representing the phenomena as other than completely subjective. As for the coincidences, your own view (unless you boldly deny that they have ever taken place) must be that they are due to chance. The view may be correct, but it would surely be none the worse for obtaining statistical support. And how should this be supplied except by taking such a census as we are attempting to take, and so establishing the infinitesimal proportion of the cases where there is a coincidence to the cases where there is not?

I am, Sir, yours obediently,

Dean's-yard, S.W., Dec. 24th, 1883. EDMUND GURNEY.

SEWER VENTILATION BY FACTORY CHIMNEYS.

A CORRESPONDENT at Burmantofts, whose house has been infected with fever through the escape into it of sewer air, advocates the ventilation of sewers by means of pipes communicating with factory chimneys. The suggestion is by no means a new one. The plan advocated has been tried, and it has also been condemned. Some, indeed, would not altogether prohibit it, but they follow the rule laid down by Sir Robert Rawlinson in insisting that any such provisions must on no account be regarded as obviating the necessity for carrying out the ordinary means of sewer ventilation. Our correspondent relies upon the "enormous suction power" of such chimney shafts; but it is precisely in this that the danger lies. So great is the suction that drain inlets in the immediate vicinity of the shafts are untrapped, and large volumes of air are drawn in at these newly made openings, as also at the ordinary street ventilators, and the whole passes directly to the chimney shafts, little or no effect being produced on the main body of the sewer itself. Directly the fire is out the suction ends, and the untrapped gullies in houses, yards, and elsewhere emit sewer and drain air. It has further been noted that furnace ventilation of sewers may be dangerous if a damaged or leaky gas main should be near the sewer. What is really wanted is means for the steady, continuous, and abundant entrance of fresh air into the sewers independent of such appliances as furnaces.

Mr. E. Turner.—We cannot at the moment direct our correspondent to the statistics referred to. Perhaps it would be well to apply to the secretary of the hospital.

Dr. De Courcy Morris.—We regret the omission, which was quite accidental.

"MEDICAL OFFICERS OF HEALTH AND MEDICAL MEN."

To the Editor of THE LANCET.

SIR,—Having read Mr. J. J. Ritchie's explanation in your issue of Dec. 29th, I still must adhere most rigidly to the facts stated in my letter of the 17th ult. With Mr. Ritchie's grave charge against the medical staff of the Leek Fever Hospital I have nothing to do, not being cognisant of any irregularity on my part. If Mr. Ritchie had evinced any desire to give me an intimation of his act, he had ample opportunity on the morning of Nov. 29th (the date of his ordering my patient's discharge) to do so, as I met him coming out of the hospital at the gate. Nay, further, his requesting the officials of the hospital to inform me, as stated in his letter, is most strenuously denied by them. Even admitting for the sake of argument that he did give directions to this effect, these facts still remain: I examined the child after his interference, and in my opinion she was not in a fit state to be discharged under the circumstances. My first intimation was received from the child's mother, whose words were "that she had received an order from the caretaker that she must remove the child, that she did not wish to do so without my consent, but Mr. Ritchie 'had spoke.'" This occurred on the evening of Nov. 30th. I hastened to the hospital the next morning (Dec. 1st), to ascertain if my patient could be treated in this peremptory manner. I found the patient gone. I was a nonentity.

In addition, I find on examination of the attendance book that Mr. Ritchie did not visit the hospital on Dec. 1st, as stated by him in his letter to you. In a spirit of courtesy, I sent a note to Mr. Ritchie, calling his attention to a letter appearing under my name in THE LANCET regarding his conduct. This, I anticipate, was the cause of his final and most satisfactory paragraph, that he desired no correspondence with me or the medical gentleman whom he designates as my employer.

I remain, Sir, yours truly,

Leek, Jan. 1st, 1884. WM. C. D. PRENDERGAST, M.D.

To the Editor of THE LANCET.

SIR,—As a natural sequence to the action of Mr. J. J. Ritchie, I have declined in future to notify any cases of infectious diseases or to send them to the Fever Hospital. Indeed, I do not see what other alternative was possible to me, provided I wished to preserve my self-respect and that independence in the treatment of my patients which is the prerogative of every medical man. Of the charge brought by Mr. J. J. Ritchie against the members of the hospital staff, I never heard till that gentleman's letter appeared, and so far as I am concerned I most emphatically deny its truth. Is it usual, may I ask, to bring accusations unsupported by one tittle of evidence in order to palliate conduct incapable of palliation? Looking at the matter from the point of view presented to us by Mr. J. J. Ritchie, is not the resolution of the commissioners to be regarded as penal, and, if so, since when have laymen been allowed to be competent judges in matters purely professional? Until the act which called forth Dr. Prendergast's indignant and proper protest I was in entire ignorance that any such resolution was in existence. Had I been aware of it, I need hardly say that I would neither have placed any patient of mine in a position in which unwarrantable interference was possible, nor any medical gentleman acting for me in one likely to be productive of insult.

In conclusion, I may mention that I have at the present moment several cases of scarlet fever which, from the want of isolation, may become prolific centres of infection, and that, although I naturally feel most strongly on the subject, I will sink self for the public good if you consider that the dignity and interests of the profession would not suffer.

I am, Sir, your obedient servant,

Leek, Dec. 31st, 1883. P. F. W. BLUETT.

UNIVERSITY OF CAMBRIDGE.

Second Examination for M.B. Degree.

THE following were the questions set for candidates at this examination, held on Thursday and Friday, Dec. 13th and 14th:—

Physiology.

1. What are the constituents of milk? Describe carefully the processes of digestion and absorption of milk.

2. Upon what influence does the pressure of blood in the arteries depend? Explain the variations of arterial blood-pressure caused by the action of the respiration.

3. Describe the formation of fat in the body. Discuss the respective values of proteid, carbohydrate, and fatty foods for the formation of fat.

4. Give the normal constitution of urine. Give the evidence as to the share taken by the different portions of the kidney in the elimination of the urinary constituents. Under what conditions can albumen be made to appear in the urine?

5. What are the factors upon which coagulation of the blood depends? Give the evidence for their existence. What is the effect upon the blood of injecting into the veins of an animal (1) a solution of peptone, (2) the washings of a blood-clot?

6. Describe the mechanism by which the vibrations of sound are transmitted to the auditory nerve, and discuss the manner in which auditory sensations arise.

Human Anatomy.

1. Describe the structures which enter into the formation of the soft palate, giving the attachments, innervation, and actions of the muscles connected therewith.

2. What are the relative positions and connexions of the nuclei from which the fourth, sixth, auditory, facial, vagus and hypoglossal nerves arise?

3. Describe the position and the vascular and peritoneal relations of the stomach, mentioning how these are affected by varying conditions of distension.

4. Give the position, relations, and distribution of the internal iliac artery and its branches. State how these differ in the fœtus from their adult condition.

5. What are Peyer's glands? Describe their minute structure and distribution. Where in the body do similar structures occur?

6. Give the attachments of the diaphragm and enumerate the parts which traverse its several openings. Specify accurately the alterations which take place in the levels of its several parts in the different acts of respiration and how these differ in the two sexes.

Dr. J. W. Maltby.—The quilts may be obtained through Messrs. Brocks and Co. of Exeter.

Mr. Chas. Bell (New York).—We cannot add to our exchange list.

Mr. Hendley.—Too late.

DETERMINATION OF SEX.

To the Editor of THE LANCET.

SIR,—It has been affirmed recently that the children of soldiers step into the world, as it is called, left foot first; and this is explained on the Darwinian principle. This is not more ludicrous than the attempts that have been made of late to account for the determination of sex. It appears to me that the fact of a female having at one time given birth to male and female offspring gives its quietus to the hitherto advanced theories, and that the explanations which have been offered of twins of different sex is far-fetched and altogether unsatisfactory. Moreover, cases can be produced where twins resulted from a single coitus, and these were male and female. I can vouch for the truth of the following facts. A friend of mine living in the village where I practise has a fine cow, which he values highly. He was desirous to put her to a certain bull. His own stock consists of but two cows. Well, when she was in heat she was sent in the keeping of a safe person to the said bull, and when she came back was, as is customary, confined to the byre during the remainder of the day and night. Next day she was put into an enclosed field with the other cow, and a lad was sent to take her home in the evening, and he put her into the same field next morning. She was carefully kept from other cattle during the whole period of gestation. In due time she calved, and had twins, the one a cow calf and the other a bull calf. Now, if the theories hitherto obtaining were correct, this cow should have had two calves of the same sex.

Putting such facts as this and various other considerations together, I have come to the conclusion that the explanations previously offered of the circumstances determining sex are superficial and unscientific, and that the following is a rational and scientific theory. Fertilisation of the ovum depends on the penetration of the zona pellucida by spermatozoa. In some cases only as many as are necessary to fertilise the ovum penetrate and become incorporated with it, in which case I think the product of conception is a male; but when a greater number are incorporated with the ovum the result is a female. The explanation I beg to submit, then, is that the sex of the individual is altogether dependent on the *number* of the spermatozoa that are incorporated with the ovum, and that the condition of the female, though it may determine whether the product of conception be single or multiple, has nothing to do with the sex of the individual or individuals that are the result of the conception.

This is a very interesting and important subject. Could not the pisciculturists throw some light upon it?—I am, Sir, yours, &c.,

December 16th, 1883. JAMES ROSS, M.A., M.D.

AMERICAN SCHOOLS OF MEDICINE.

W. W. writes us maintaining that the general impression in Great Britain concerning medical education in the States is unjust and inadequate. He gives a very interesting account of the three medical schools in Cleveland—"the Forest City" of the great West, on the banks of Lake Erie. We regret that we cannot insert our correspondent's letter, not because we doubt the general accuracy of its representations, but that it nowise abates the objection to such a number of schools and licensing authorities, without any central authority, to check and control their curricula or their examinations. Even in the Cleveland institutions, which he defends, one is a homœopathic school. As an entrance examination they do not require more than evidence of a good English qualification. The regulations of all only demand two terms of study, and a degree is to be obtained by persons holding qualifications by undergoing an apparently easy examination in medicine, surgery, and obstetrics. When such free and easy regulations as these obtain even in the better schools of the States, it is obvious that the whole system needs complete reform.

Medicus.—Registrars are instructed to bring under the notice of the coroner, through his officer or through the police, all deaths resulting from any form of violence, or occurring under suspicious circumstances, whether or not the causes of such deaths have been duly certified by a registered medical practitioner. Such instruction is given in the interest of the public; but, apart from such instruction, the registrar shares with every member of the public the right and the duty to bring under the notice of the coroner any case which it appears to him to be one which ought to be the subject of an inquest. It is clear that a registrar of births and deaths can have no right to "send for a medical practitioner" to give any explanation concerning a medical certificate which he may have given, and we are sure that such a course would meet with the disapproval of the Registrar-General.

Mr. Macgregor.—THE LANCET, May 28th, and June 4th, 1881. Application might be made to the Dress Reform Association.

RUPTURE OF THE PLANTARIS MUSCLE.

To the Editor of THE LANCET.

SIR,—The interesting case, related in your valuable journal of Dec. 1st, which occurred to Brigade Surgeon W. G. Don, M.D., has induced me to send the following as a kind of pendant, and as showing also that absolute rest, though very desirable, is not a necessity in such a case, and that the rupture may take place in the young as well as in the middle-aged subject or those more advanced in life.

E. D——, a young lady, aged twenty-six, was walking on the iron grating of a greenhouse on Sunday, Nov. 25th, when her foot slipped off the side of the floor forwards, extending the limb; she felt a pain in the middle of the calf of the left leg, but not severe enough to prevent her walking back to the house. On the Monday and Tuesday the leg felt very stiff, numbed, and, as she described it, like a wooden one when she attempted to walk. Thinking it was a sprain, it was well rubbed with an embrocation, and as the weather was unsettled little exercise was attempted on either days. The next day (Wednesday) carriage exercise was taken, but on alighting near the stables she found she could not walk and she fell towards an adjacent wall; the pain was intense at one spot in the middle of the calf, and she had to be conveyed to the house. The pain was now so great that professional assistance was had recourse to. On examination, the calf was found very much swollen, discoloured, and painful, and a swelling the size of an egg occupied the popliteal space. A ruptured tendon was diagnosed, and from the amount of locomotion indulged in after the accident and the absence of very acute symptoms, following immediately the occurrence, it was judged to be a small one, and the plantaris was named and the nature of the injury pointed out. Soap liniment, with tincture of opium and chloroform, was given to allay the pain, and bromide of potassium prescribed to procure sleep. Absolute rest was enjoined, but in the evening of the Friday the patient came downstairs with assistance. At the end of a week walking exercise could be taken by the aid of a stick, and she goes considerable distances now, but finds difficulty in proceeding down steps or down hill. Pain and stiffness are now confined to the inner side of the tendo Achillis, corresponding to the direction of the plantaris to its insertion in the calcaneum, and there is a little eversion and slight dragging of the foot during progression. Liston, in his "Practical Surgery," 1846, states that: "Solution of continuity in muscles and tendons is readily repaired when these are favourably placed; the blood is absorbed; new matter is deposited, becomes organised, and is speedily converted into a substance somewhat resembling the original tissue." Bryant says: "The parts should be kept in apposition for at least one month or six weeks, otherwise some stretching of the uniting medium will take place, and permanent weakness or deformity"; and this would no doubt ensue in any larger muscle than the plantaris, which in man appears to be somewhat of a rudimentary character, and the representative of the palmaris longus in the upper limb, though it is strongly developed in bears and plantigrade mammals.

I am, Sir, yours faithfully,

GEORGE ASHMEAD, L.R.C.P., &c.,
Surgeon to the Employers' Liability Assurance Corporation.

Brierley Hill, Dec. 12th, 1883.

THE LATE MR. J. F. SOUTH.

WE understand that Mr. John Murray will publish in a few weeks a volume of memorials of the above well-known hospital surgeon, who twice filled the chair as president of the Royal College of Surgeons. His papers have been collected and edited by Professor Feltoe, of St. David's College, Lampeter.

A.M.D.—Our correspondent's statement respecting the case of the officer to whom he alludes is much too loose to justify publication in its present form. Besides, as the officer has applied for a court of inquiry, it would be manifestly improper to publish anything, either favourable or unfavourable, respecting his conduct or the manner in which he has been treated.

THE GOLD COAST COLONY.

To the Editor of THE LANCET.

SIR,—I beg that you will allow me space for a few words descriptive of medical service under the Colonial Office in the Gold Coast colony, which may prove useful as a warning. By placing in contrast the conditions under which the African army medical officers and those under which the colonial surgeons serve, a fair estimate may be arrived at of the liberality or otherwise of these services.

1. The African army medical officers serve twelve months on the West Coast of Africa, at the expiration of which period they are entitled to twelve months' leave of absence, and any detention beyond the year of residential service is compensated by a commensurate extension of leave. The colonial medical officers also nominally serve for twelve months on the Coast, but, as their leave practically depends on the will or caprice of the governor, they are very frequently detained beyond that term of service without adequate exigency. After their term of residential service they are entitled to six months' leave of absence, which means about four months in Europe, for two months are occupied in the wearisome and uncomfortable voyages to and from the colony, and they can claim no extension of lease for detention. I have no hesitation in asserting that this period of leave is too short to recruit the health of officers after twelve to eighteen months' residence in this climate.

2. The African army medical officer is sure of promotion in due time. The colonial medical officer is nearly equally sure not to obtain promotion.

3. The African army medical officer can claim a fair pension after fourteen years of nominal service, for seven years of the fourteen are spent on leave. The colonial medical officer cannot claim a pension until he is fifty-five years of age, an utterly hopeless prospect, except he has served seven years or more and is so incapacitated by ruined health as to be unfit for further work. In such case a miserable annuity is granted of so mean amount that his physical sufferings are rendered still more intolerable by poverty.

4. The work of the colonial medical officer necessitates far more exposure than that of his military *confrère*. He can never lay up in sickness with an easy mind or without inconvenience to the public service, for almost invariably he is the only medical man at or near to his station, whereas there are always two or more army surgeons at their stations.

5. The army medical officer is fairly well supplied with drugs, appliances, and instruments. The colonial medical officer is always stinted in, and often without, the most essential armamentaria of his profession, and never finds his station adequately furnished.

It is then not to be wondered at that the Colonial Office finds it difficult to secure capable men, nor that those in its service should be disgusted and disheartened. Reform in the following directions is urgently called for, both in justice to the men already in the service and in order to obtain in future a good class of medical men:—

a. Eight months' leave of absence after twelve months' residential service. This would mean six months in Europe.

b. Salaries to increase by triennial increments to £800 per annum.

c. The certainty of a fair pension after twelve years' service, if desirous of retirement, or of a proportionately larger pension eventually, if willing to serve for a longer period.

I am, Sir, your obedient servant,

December, 1883. GOLD COAST.

SCARLET RHEUMATIC FLANNEL.

To the Editor of THE LANCET.

SIR,—In answer to a correspondent who signs himself "Rheumatic," the following is a simple process by which arsenic may be shown if present in a garment or fabric of a scarlet colour. The material should be cut up into small pieces and boiled thoroughly with weak hydrochloric acid. After straining, evaporate the acid liquid to a very low bulk, and introduce a strip of bright copper, and heat. If, after heating, a leaden film is noticed on the copper, the strip should be carefully dried and heated in a perfectly dry test tube, when a crystalline sublimate will be noticed a short distance from the copper. This test is known as Reinsch's, and is simple in its conduction. Since reading the letter by "Rheumatic," I have analysed three separate half yards of red flannel, three samples of red wool, two of worsted, two of red ribbon, and two pairs of red cloth drawers, all obtained from different sources, and have failed to detect arsenic in any of them by the above-mentioned or by Marsh's test. On repeating experiments on red socks and stockings I found (as I communicated to THE LANCET last year) some containing tin salt, and possibly it is the presence of this that has set up the skin irritation referred to by "Rheumatic."—I am, Sir, yours truly,

London. JOHN WOODLAND.

POSOLOGICAL TABLES.

WE publish this week in our advertising columns a very full and complete series of Posological Tables issued by Messrs. Ferris and Co., of Bristol. They cannot fail to be of service to many of our readers, especially to those engaged in practice in outlying provincial districts.

THE LATE DR. HILTON FAGGE.

WE are asked by the family of the late Dr. Hilton Fagge to allow them to express their thanks for the sympathy shown by many friends in their great trouble, and to record their appreciation of the kind expressions in the letters that have been received, an answer to each communication being impossible, owing to the large number that has been received.

ST. PANCRAS FEMALE ORPHANAGE.

To the Editor of THE LANCET.

SIR,—Comparisons drawn from the following facts may be interesting to many of your readers on a question of vital importance. In a Christmas appeal for support, the committee of the London Temperance Hospital say, "A serious outbreak of typhoid fever occurred in the neighbourhood of the hospital. Twenty persons suffering from this dangerous complaint were placed under the care of our staff, and while we, with sincere regret, have to report that in three instances the patients died, it is a cause for thankfulness that so large a proportion as seventeen have been discharged as cured."

In juxtaposition to this, I have to record that at the St. Pancras Female Orphanage (of which I have the pleasure to be the honorary secretary), 108, Hampstead-road, a few doors from the Temperance Hospital, we also had an outbreak of typhoid fever, and after anxious consultation with Dr. Adams, the honorary medical officer, we decided on despatching nine severe cases to the London Fever Hospital, where, I need hardly say, the treatment was not fettered by the "non-alcoholic principle;" indeed, I am prepared to state, from personal observation of our poor little sufferers, that alcohol formed an important factor in the treatment. The result was the entire restoration of all; and their subsequent location in convalescent homes has restored the roses to the sufferers' cheeks. The expense thereby inflicted on our funds was very great, and I am justified in appealing for assistance for an institution where discretion has been used with such marked success, when a neighbouring institution scores a mortality of 15 per cent. against our 0 per cent. I am aware that the mortality from typhoid fever is usually 15 or 16 per cent. in hospitals, and therefore I feel that the comparisons to be made from the hard facts I have related are deserving of serious consideration. In conclusion, I beg to assure you that I have not sought to bring the subject under notice from any feeling of antagonism to the London Temperance Hospital, as I have been a subscriber thereto from the first year of its establishment, feeling that there was ample room for another institution for the alleviation of human suffering, counting among its promoters some of my most esteemed friends.

I am, Sir, your faithful servant,
CHARLES WORREL,
Hon. Sec., St. Pancras Female Orphanage,
Dec. 29th, 1883. Hampstead-road.

ERRATUM.—In the "Obituary" section of the Annus Medicus, published last week, for "Anthony Davies," read Anthony Davison.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Professor Gairdner, Glasgow; Sir J. Bennett, London; Mr. Berkeley Hill, London; Dr. Moxon, London; Mr. W. Barnes, London; Dr. Pavy, London; Dr. Whitla, Belfast; Dr. Rowlatt, Paris; Mr. Romeike; Dr. E. J. Wilson, Cheltenham; Mr. W. Robinson; Dr. Macnaughton Jones, London; Mr. Lloyd, London; Mr. Clement Lucas, London; Dr. Gairdner, Glasgow; Mr. Wright, Manchester; Dr. Thos. Barlow, London; Mr. Michelli, London; Mr. Makuna, London; Dr. O'Neill, Belfast; Dr. Hill, Birmingham; Dr. Davenport, Boston, U.S.A.; Mr. G. H. Ormsby, Longfield; Dr. Macalister, Cambridge; Mr. Fox, Bristol; Mr. H. Weekes, Barcelona; Mr. W. F. Grant, London; Mr. Hendley, London; Dr. W. T. Parker, Morristown; Mr. Schofield, London; Dr. Stephen Mackenzie, London; Dr. C. J. Hare, London; Mr. J. Fletcher, London; Dr. Alder Smith, London; Dr. R. F. Lloyd, London; Mr. Davies, Cheltenham; Messrs. Nathan and Co., London; Dr. Hutchinson, Scarborough; Mr. Parkes, Dublin; Messrs. Lee and Martin, Birmingham; Mr. Doyle, Dawley; Mr. Mathews, Belfast; Mr. Briscoe, Bolton; Mrs. Moorhouse, London; Mr. Fletcher, London; John Humble; Dr. Junker, London; Dr. Verdon; Dr. De H. Hall, London; Mr. Gerner, London; Dr. Hudson, Leeds; Dr. Goodhart, London; Dr. Burnet, London; Dr. Davison; Mr. H. W. Freeman, Bath; Mr. Scudamore, London; Mr. F. B. Lee, Heckmondwike; Mr. Culhane, Great Marlow; Mr. Forrest, Brandesburton; Mr. Scott, Manchester; Dr. Ferguson, Killygordon; Dr. Barrett, Holloway; Mr. James, Pentre; Mr. Flint, Westgate-on-Sea; Messrs. Beal and Co., Brighton; Mr. Carne, Okeford; Dr. Mantle, Stanley; Mr. Maw, Blackford; Messrs. Lee and Nightingale, Liverpool; Mr. Plowman, North Curry; Dr. Eastwood, Darlington; Mr. Banbury, Durley; Mr. Williamson, Ventnor; Mr. Armstrong, Manchester; Mr. Ellis, Westward Ho; Mr. Kynaston; Dr. Tetley, Keighley; Mr. Mitchell, London; Mr. Fisher, London; Dr. Prendergast, Leek; Dr. De Renzy, Bray; Dr. C. S. Taylor, London; Mr. G. R. Jesse, Henbury; Mr. Cadge, Norwich; Silicated Carbon Filter Company; A. B., Towcester; H. C., Worthing; G. S. S., Northwich; Medicus, Surbiton; Sigma; Doctor, Lewisham; Anti-Humbug; W. B. S.; Candidate; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Willey, Sheffield; Mr. Gravatt, London; Rev. A. Welsh, St. Mary Cray; Rev. R. Smith, Sudbury; Mr. Banbury, Dursley; Miss Hewlett, Harrow; Mr. Nickoll, Murrayfield; Mr. Stoad; Dr. Laffan, Caston; Mr. Johnston, Liverpool; Mr. Hughes, Bromley; Dr. Legrade, Lyons; Dr. Wilson, Cragg; Mr. Ruspini, Knutsford; Mr. Pick, Melbourne; Dr. Fox, Clifton; Dr. Redwood, Rhymney; Dr. Inglis, Edinburgh; Dr. Norman Kerr, London; Mr. Brownlee, Portadown; Dr. Butler, Castle Donington; Mrs. Evans, Ashton; Mr. Coltman, Leicester; Mr. Bolleau, Paris; Mr. Stilliard, Birmingham; Mr. Milne, Kent; Mr. Hughes, Birmingham; Mr. Fulton, Toronto; Mr. Tweedy, Knayton; Mr. Jeffrey, Maghull; Dr. Arnetson, Newcastle-on-Tyne; Mrs. Bartlett, Dewsbury; Mr. Knightley, London; Dr. Greenhough, Derby; Mr. Davison, Battle; Mr. Harrison, Sherburn; Mr. Joel, Huddersfield; Messrs. Bilby and Co., Liverpool; Mr. Williamson, Manchester; Mr. Morgan, Islington; Mr. Hurley; Mr. Woodward, Finsbury; Mr. Marsh, Wigan; Dr. Lewis, Woolston; Mr. Saunders, London; Mr. Russell, Scorrier; Mr. Wells, Finsbury; Mr. Ashdown, Ramsey; Mr. Elliott, Chichester; Mr. Dunn, Preston; Dr. Jackson, Great Grimsby; Mr. Pratt, London; Mr. Shaw, London; Mr. James, Worthing; Dr. George, Limerick; Mr. Linde, Ross; Mr. Tattersall, Victoria; Mr. Donaldson, Burt; Dr. Duncan, Gippesland; Mr. Barff, Leightonstone; Dr. Diack, Cape Colony; Mr. Haywood, Whitstable; Mr. Davies, Cheltenham; Mr. Hopkins, Tuam; Mr. Townson, Birmingham; The Vicar, Chobham; Cymro, Brecon; Medicus, Corwen; Pentonville; Verax; T. S.; W., Dublin; M.B.; Medicus, Croydon; L.; J. H. B., Whitby; Medicus, Oldham; Gamma, Stockport; E. P., Burton-on-Trent; Surgeon, Notting-hill; Detroit; Ego, Leicester; S. E. T., Edinburgh; Omega, Wolverhampton; W. K.; X. Y. Z., Biggleswade; A. O. Z.; Cantabridgiensis; Locum; V. G.; G. A., Finsbury; &c., &c.

Bristol Mercury, Liverpool Courier, San Francisco Christmas Chimes, Melbourne Age, Bridgewater Mercury, Bombay Gazette, Leamington Spa Courier, Kent and Sussex Courier, Birmingham Daily Post, Woods and Forests, &c., have been received.

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